Performance Communications Appliance for the Intel(R) Pentium(R) M Processor

INTEL CORPORATION

Title: Performance Communications Appliance for the Intel(R) Pen

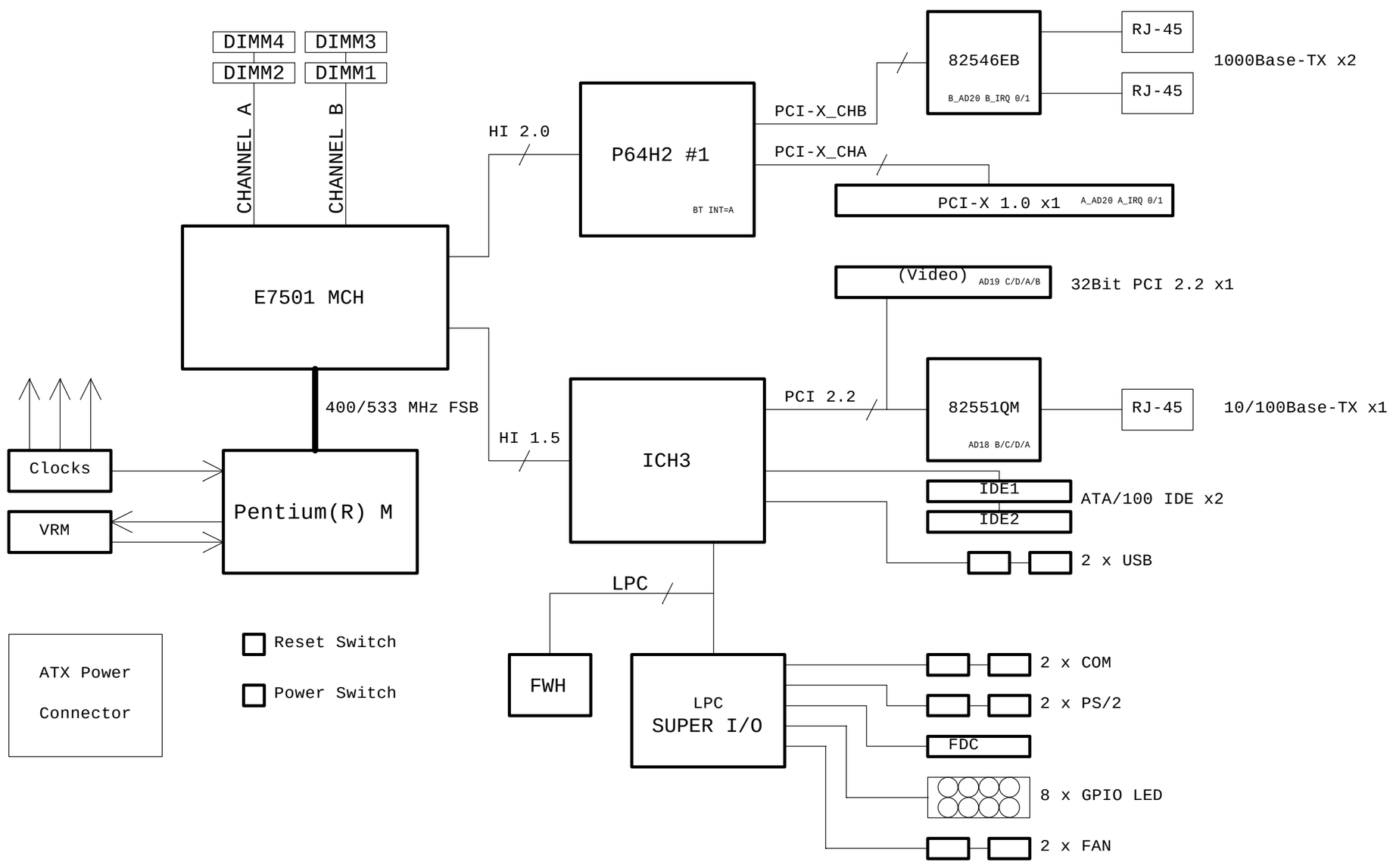
Size | Document Number: CONTENT | Rev: A0

Date: Wednesday, April 09, 2003 | Sheet 1 of 41

Initial Release: REV. A0

	INTEL CORPORATION	
Title	**Performance Communications Appliance for the Intel(R) Pen**	
Size	Document Number DISCLAIMERS, REVISIONS & CHANGES	Rev A0
Date:	Wednesday, April 09, 2003	Sheet 2 of 41

Performance Communications Appliance for the Intel(R) Pentium(R) M Processor Block Diagram



INTEL CORPORATION		
Title	**Performance Communications Appliance for the Intel(R) Pen**	
Size	Document Number: BLOCK DIAGRAM	Rev: A0
Date: Wednesday, April 09, 2003	Sheet 3 of 41	

1.Route pin AE7,AF6 VCCSENCE,VSSSENSE differential

CPU Straping: CPU_TEST[3..1],CPU_TDI,CPU_TMS,CPU_TRST#,CPU_TCK
Route 5:10, L=2.0"

2.Route following common clock signals 4:8, 3.0" < L <6.5"
No TLM(trace length match) requirement. but route on same layer
HADS#, HBNR#, HBPM#[5..0], HBPRI#, P0_BREQ#0,
HDRDY#, HDBSY#, HDEFER#, DDPWR#, HTRDY#,
HIT#, HITM#, HLOCK#, HRS#[2..0], HCPURST#

3. Source Synchronous Signal List

signals	matching	relative to
HREQ#[4..0], HA#[16..3]	+/-200mil]	HADSTB#0
HA#[31..17]	+/-200mil]	HADSTB#1
HD#[15..0], HDBI#0	+/-100mil	HDSTBP#0, HDSTBN#0
HD#[31..16], HDBI#1	+/-100mil	HDSTBP#1, HDSTBN#1
HD#[47..32], HDBI#2	+/-100mil	HDSTBP#2, HDSTBN#2
HD#[63..48], HDBI#3	+/-100mil	HDSTBP#3, HDSTBN#3

Signals within its associated strobe group must be route
on the same internal layer for the entire length of the bus
and reference to ground.
Strobes: 5:15, 3.0"<L<7.5"
HDSTBP#[3..0], HDSTBN#[3..0], HADSTB#[0..1]
TLM of +/-25mil to +/- strobe pair

4. Asynchronous signals:
A20M#, ICH3_DPSLP#, FERR#, IERR#, IGNNE#
INIT#, LINT0_INTR, LINT1_NMI, PROCHOT#, CPUPWRGD
CPU_SMI#, CPUSLP#, STPCLK, THERMTRIP#

5. Hub link interface

a. PSTRBSA,PSTRBFA,PSTRBFA,HIA[0..11],PSTRBFB,PSTRBSB,PUSTRBFB,HIB[0..18]
Route 5:15 3.0" < L < 20.0"
b. HIRCOMPB,HIVSWINGB,HIVSWINGA,HIVREFA must be less than 3.5" from divider to pin
c. HIRCOMPB,HIRCOMPA,less than 1.0"
d. less the 4 vias per signal
e. Keep all strobe/data group on same layer

6. DDR interface
a. DDRA_DRCOMP, DDRB_DRCOMP less than 1.0"
b. DDRACLK0,DDRA_CLK0#,DDRA_CLK1,DDRA_CLK1#,DDRB_CLK0,DDRB_CLK0#,DDRB_CLK1,DDRB_CLK1#,
route 7.5 : 20
c. DDRA_CLK0/DDRA_CLK#0 to DIMM1= 4.0" +/-250mil
DDRA_CLK1/DDRCLK#1 to DIMM1 = 6.0" +/-250mil
DDRB_CLK0/DDRB_CLK#0 to DIMM1= 4" +/-250mil
DDRB_CLK0/DDRB_CLK#0 to DIMM1= 6" +/-250mil
DDRA_CLK0/#0 +/- 2mil, DDRA_CLK1/#1 +/-2mil
DDRB_CLK0/#0 +/- 2mil, DDRB_CLK1/#1 +/-2mil

DDR Source Clocked signals
DDRA_MA[12..0],DDRA_CASR#,DDRA_RASR#, DDRA_WER#, DDRA_BAR[0..1]
DDRB_MA[12..0],DDRB_CASR#,DDRB_RASR#,DDRB_WER#,DDRB_BAR[0..1]
a.Route 5:15, 2.0"< L <6.0" to DIMM1 for channel A
b.Route 5:15, 2.0"< L <6.0" to DIMM3 for channel B
c.Last DIMM to RTT less than 0.8"

DDR Source Synchronous Signals:
DDRA_DQ[63..0]+DDRA_DQR[63..0],DDRB_DQ[63..0]+DDRB_DQR[63..0],
DDRA_DQS[17..10]+DDRA_DQSR[17..10],DDRB_DQS[17..10]+DDRB_DQSR[17..10],
DDRB_CB[7..0]+DDRB_CBR[7..0]
a.Route 5 : 15, 0.1" < RS to DIMM1 or DIMM3 < 0.8"
b.1.8" < MCH to DIMM1 or DIMM3 < 5.5"
c.last DIMM to RTT < 0.8"
d.DQ TO DQS +/- 25mil

DDR Chip Select
DDRA_CS#[3..0], DDRB_CS#[3..0]
a.Route 5:15, L = 4.0" +/-875mil to first DIMM
b.L = 6.0" +/-875mil to 2th DIMM
c.0.3" < Last DIMM to RTT < 1.5"

DDR CKE
DDRA_CKE0, DDRB_CKE0
a.Route 7.5:15,
b.1.8" < L < 6.0"
c.Last DIMM to RTT

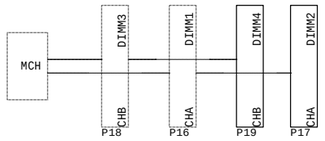
DDR Receive Enable
DDRA_RCVENOUT,DDRB_RCVENOUT
a.Route 5:15
b.No length match requirement

DDR DDRCOMP
DDRA_DRCOMP,DDRB_DRCOMP
a.Route 5:15
b.L<1.0"

ODTCOMP, MCH_DDRVREF
Route 5:10

DDRCVO
DDRB_CVOH,DDRA_CVOH
a.Route 15:20
b.L < 1.0" from divider

DDR DIMMs Topology



7.ICH3 Hob Interface
a. ICH3_HITERM,ICH3_HIREF,must be less than 3.5" from divider to pin
b. ICH3_HICOMP less than 1.0"
c. less than 4 vias per signals
d. Keep all strobe/data group on same layer

IDE interface
Primary:PDD[15..0],PDA[2..0],PDCS#1,PDCS#3,PDIOW#,PDIOR#,PIORDY,PDDACK#,PDDREQ
Secondary:SDD[15..0],SDA[2..0],SDCS#1,SDCS#3,SDIOW#,SDIOR#,SIORDY, SDDACK#,PDDREQ
a.all IDE route 5:7, length less than 8.0"
b.all IDE length match within +/-250

USB interface
USBP0P, USBP0N, L_USBP0P, L_USBP0NUSBP1P, USBP1NL_USBP1P, L_USBP1P
a. route differential 5:6, space to other signals and other USB,
differential pair 20mil, space to clocks & PCI signals 50mil.
b. Ground reference & as short as possible & minimum vias
c. far away from high speed clocks & signals and avoid parallel.
d. stub length < 200mil,
e. avoid switch layer
f. do not across anti-etch
g. trace length match ¡Ó75mil, ICH3 to USB connector

8. Giga Lan i82546EB
a. MDIA0+/- + L1_A+/- less than 4.0"
b. All differential pair should TLM (+/-25mil)
c. Space between unlike differential pair > 50mil

9. P64H2 clocks
P1A_PCLK0
a. L1=P1A_PCLKO < 1.0"
b. L2=P1A_PCLKI- 2.5" ¡Ó25mil
c. Route 5:15
P1B_PCLK0
a. L1=P1B_PCLKO < 1.0"
b. L2=P1B_PCLKI ¡Ó25mil
c. Route 5:15 Spacing to Other Traces:25mil

10. CLOCKS
BCLK0/BCLK1, HCLKINP/HCLKINN, ITPBCLK0/ITPBCLK1
a. trace width: 5mil
b. Differential pair spacing: 20~25mil
c. Spacing to other trace: 25mil
Serpentine Spacing: 5:26
e. Processor to MCH Length Matching:-400mil
f. Differential length matching: +/-25mil
g. Avoid toswitch if possible

CLK66
Trace length L1(RMCH_CLK66): 0.00 ~ 0.50"
Trace Length L2 (MCH_CLK66): 3.0" ~ 9.0"
Clock Driver to MCH (RMCH_CLK66+MCH_CLK66):L1 + L2 = 3.0 ~ 9.5"= T
Clock Driver to MCH (RICH3_CLK66+ICH3_CLK66)=RMCH_CLK66+MCH_CLK66=T

Clock Driver to P64H2=T - 0.34"

33MHz PCI Clocks
Trace Length L1:RICH3_PCLK,RFWH_PCLK,RSIO_PCLK,RLAN1_PCLK
Trace Length L2:ICH3_PCLK,FWH_PCLK,SIO_PCLK,LAN1_PCLK:0 ~ 0.5"=x1
Trace Length to PCI slot:RP32CLK+P32CLK=X1+X2-2.5": 3.0" ~9.0"=x2
Skew requirement: must be matched to +/-100mil of ICH3_CLK66

CLK14.318
RICH3_CLK14 : 0~0.5"
ICH3_CLK14 : 3.0"~9.0"
Route 5:10

USB Clock
RICH3_CLK48 : 0~0.5"
ICH3_CLK48 : 3.0"~12.0"
Route 5:25

INTEL CORPORATION

Title **Performance Communications Appliance for the Intel(R) Pent**

Size	Document Number	Rev
	LAYOUT NOTICE 1	A0
Date: Wednesday, April 09, 2003	Sheet 4 of 41	

INTEL CORPORATION

Title: Performance Communications Appliance for the Intel(R) Pen

Size	Document Number	Rev
	LAYOUT NOTICE 2	A0

Date: Wednesday, April 09, 2003 Sheet 5 of 41

INTERRUPT ROUTING TABLE:

ICH3 INTERRUPT:
PIRQA#: P64H2
PIRQB#: 82551 AD18
PIRQC#: 32BIT PCI SLOT
PIRQD#: NO USE
PIRQE#: NO USE
PIRQF#: NO USE
PIRQG#: NO USE
PIRQH#: NO USE

P64H2
P1AIRQ0: PCI-X SLOT P1A_AD20
P1AIRQ1: PCI-X SLOT
P1AIRQ2: PCI-X SLOT
P1AIRQ3: PCI-X SLOT
P1BIRQ0: 82546EB P1B_AD20

CONNECTOR:

CN1: 10/100M Bits RJ45
CN2: 10/100/1000 bits RJ45
CN3: 10/100/1000 bits RJ45
CN4: COM1 Connector
CN5: USB Connector
CN6: PS/2 KB/MOUSE
CN7: COM2 Connector
CN8: CPU FAN Power Connector
CN9: Auxiliary +12V Power
CN10: ITP700FLEX Connector
CN11: ATX Power
CN12: SYSTEM FAN Power Connector
CN13: Connector for LEDs, RESET Button, POWER Button
CN14: FLOPPY DRIVE Connector
CN15: PRIMARY IDE Connector
CN16: SECONDARY IDE Connector
CN17: SYSTEM FAN Power Connector
SW1: Power Button
SW2: Reset Button
SLOT1: 32Bits PCI Slot
SLOT2: PCI-X Slot
MTH1: Hook for MCH Heat Sink
MTH2: Hook for MCH Heat Sink

JUMPER:

JP1, JP2, JP3: PCI-X SETTING

JP4: BIOS WRITE PROTECT
ON WRITE ENABLE
OFF WRITE PROTECT

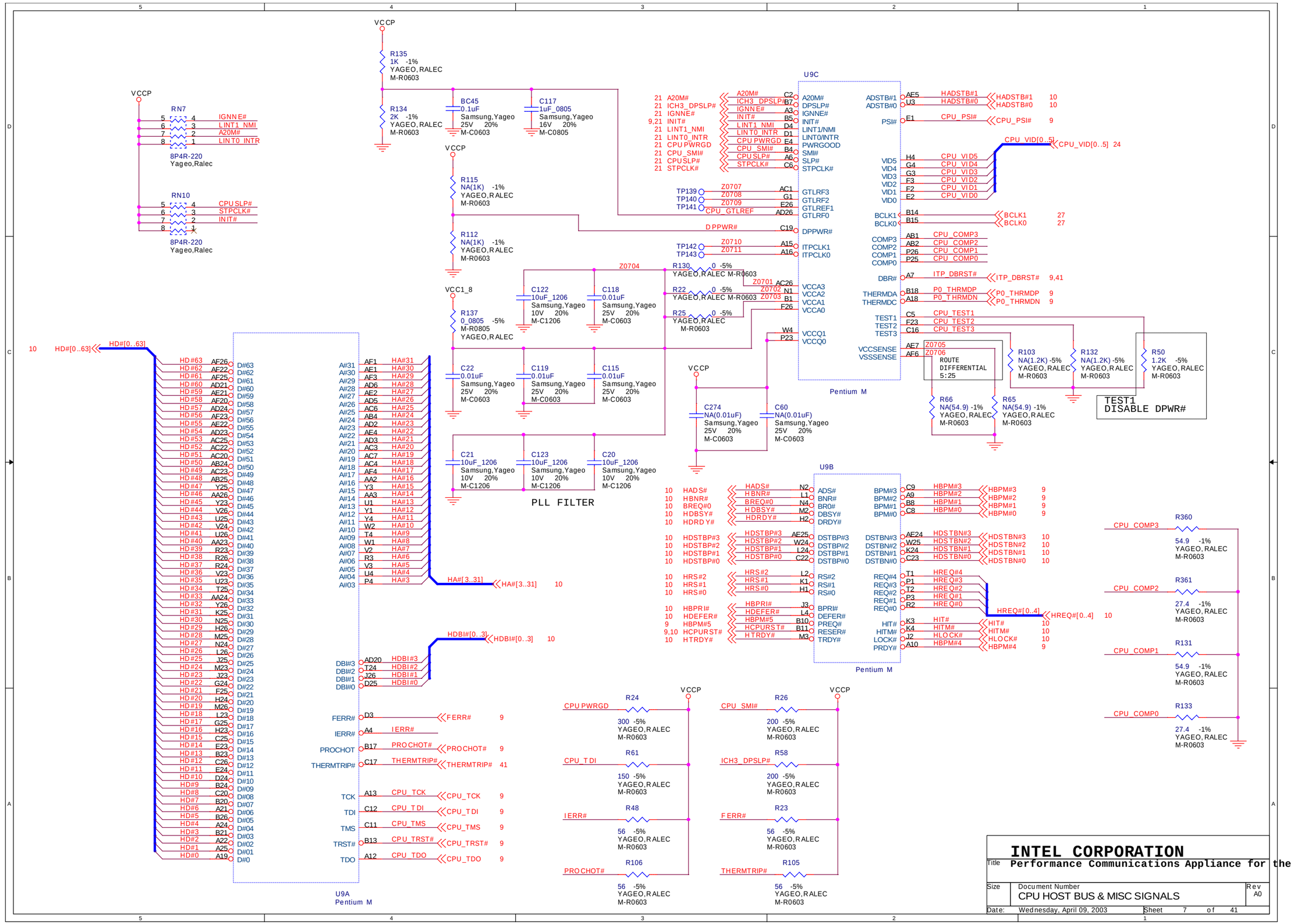
JP5: TCO REBOOT
ON NO REBOOT MODE
OFF NORMAL

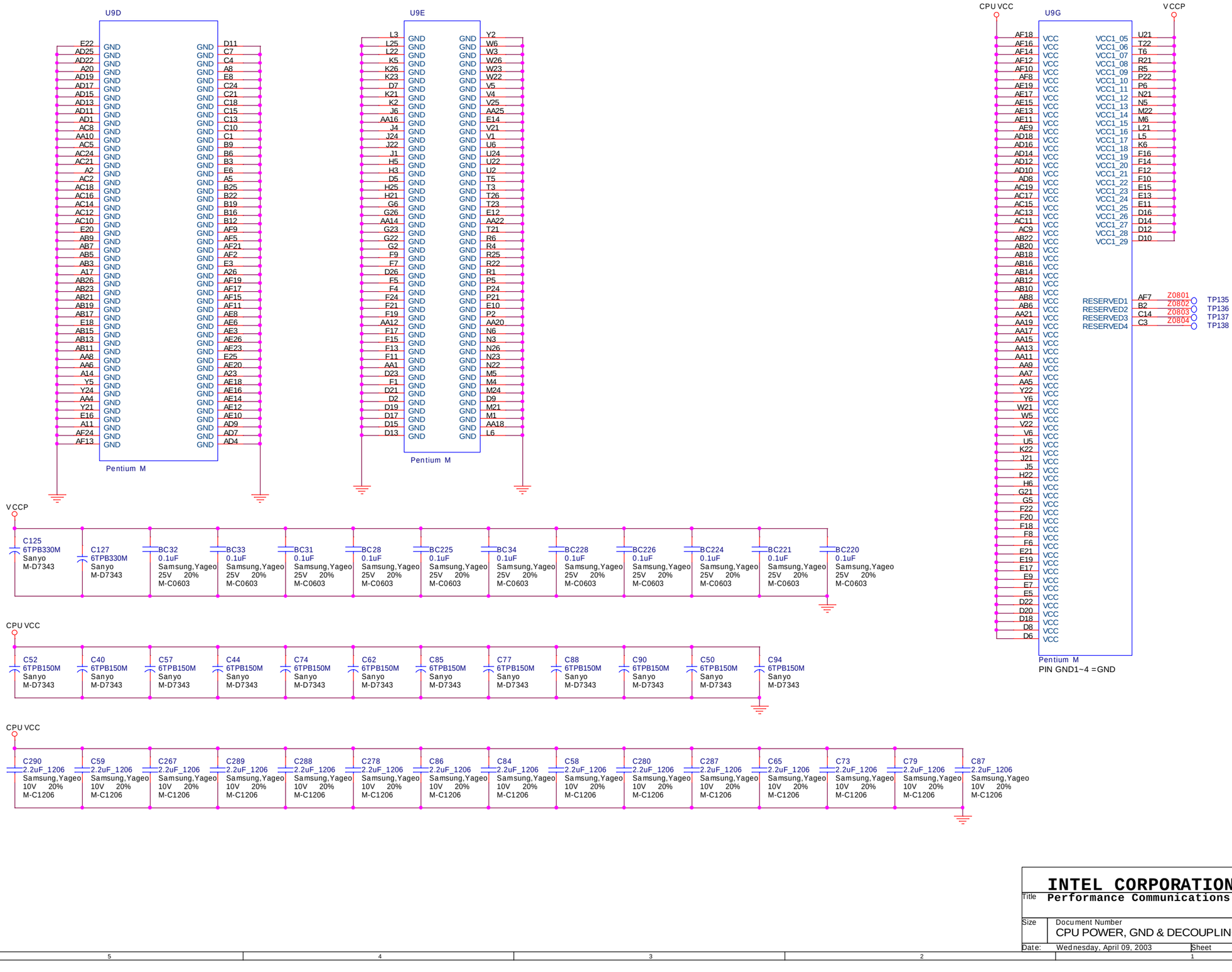
JP6: BUZZER
ON ENABLE
OFF DISABLE

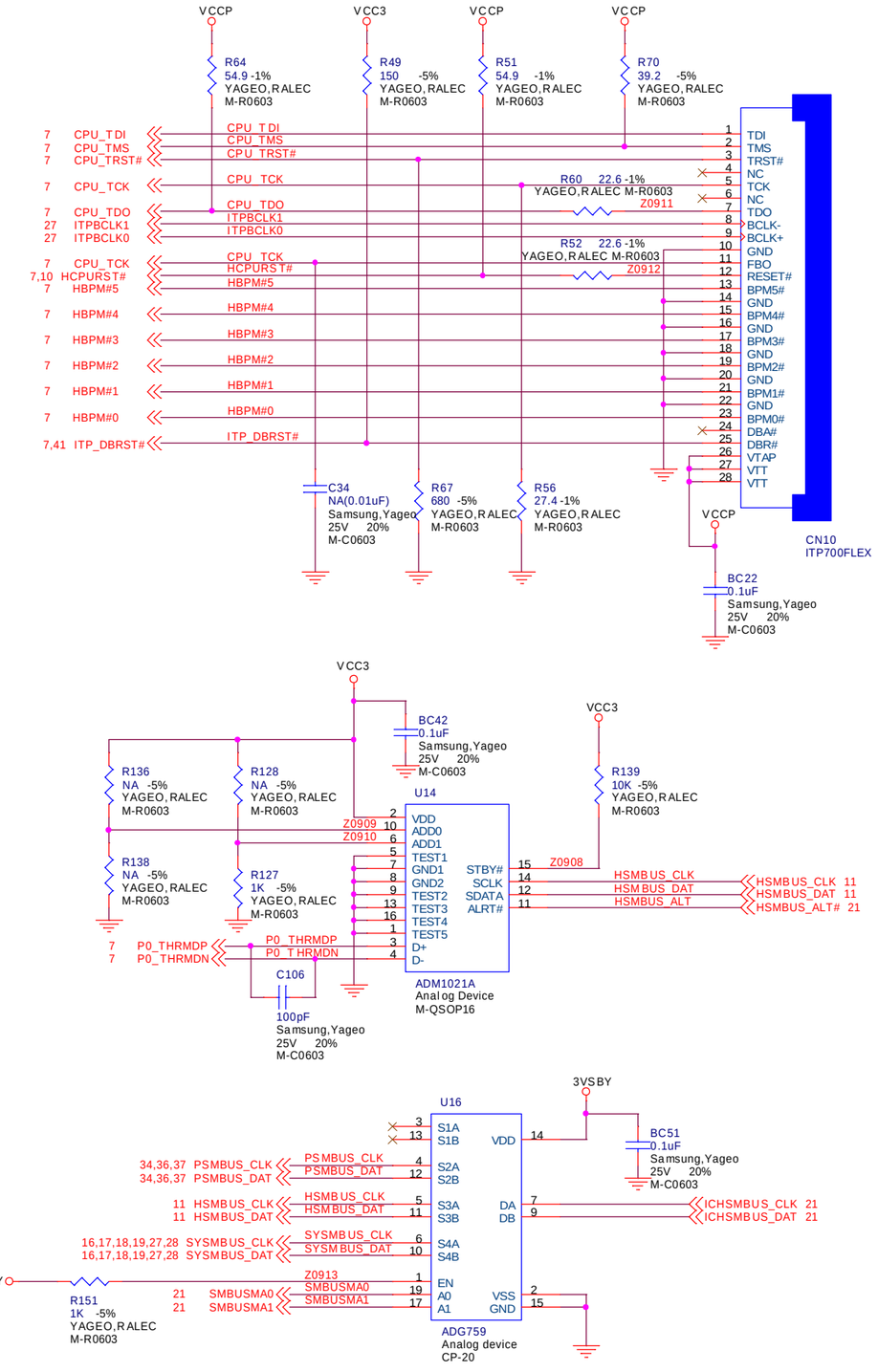
JP7: TOP SWAP
ON ENABLE
OFF DISABLE

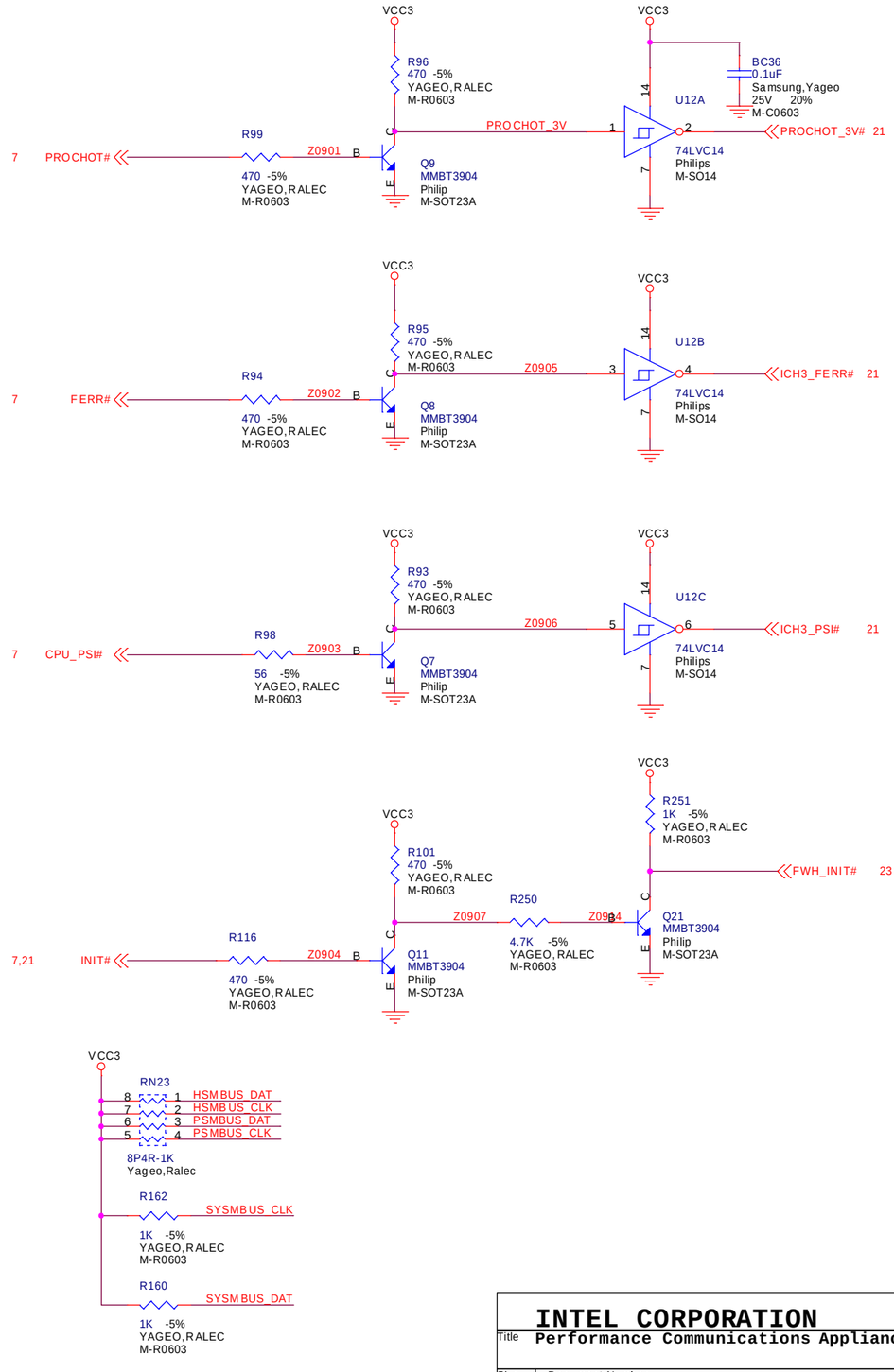
JP8: CPU SAFE MODE
ON DISABLE
OFF ENABLE

JP9: CMOS CLEAR
1-2 NORMAL
2-3 CLEAR


VCCP
R135
1K -1%
YAGEO,RALEC
M-R0603
R134
2K -1%
YAGEO,RALEC
M-R0603
BC45
0.1uF
Samsung,Yageo
25V 20%
M-C0603
C117
1uF_0805
Samsung,Yageo
16V 20%
M-C0805
RN7
IGNNE#
LINT1_NMI
A20M#
LINT0_INTR
8P4R-220
Yageo,Ralec
RN10
CPUSLP#
STPCLK#
INIT#
8P4R-220
Yageo,Ralec
R115
NA(1K) -1%
YAGEO,RALEC
M-R0603
R112
NA(1K) -1%
YAGEO,RALEC
M-R0603
VCC1_8
R137
0_0805 -5%
M-R0805
YAGEO,RALEC
C122
10uF_1206
Samsung,Yageo
10V 20%
M-C1206
C118
0.01uF
Samsung,Yageo
25V 20%
M-C0603
C22
0.01uF
Samsung,Yageo
25V 20%
M-C0603
C119
0.01uF
Samsung,Yageo
25V 20%
M-C0603
C115
0.01uF
Samsung,Yageo
25V 20%
M-C0603
C21
10uF_1206
Samsung,Yageo
10V 20%
M-C1206
C123
10uF_1206
Samsung,Yageo
10V 20%
M-C1206
C20
10uF_1206
Samsung,Yageo
10V 20%
M-C1206
PLL FILTER
Z0704
R130 0 -5%
YAGEO,RALEC M-R0603
R22 0 -5%
YAGEO,RALEC M-R0603
R25 0 -5%
YAGEO,RALEC
M-R0603
U9C
Pentium M
21 A20M#
21 ICH3_DPSLP#
21 IGNNE#
9,21 INIT#
21 LINT1_NMI
21 LINT0_INTR
21 CPUPWRGD
21 CPU_SMI#
21 CPUSLP#
21 STPCLK#
TP139
TP140
TP141
Z0707
Z0708
Z0709
CPU_GTLREF
DPPWR#
TP142
TP143
Z0710
Z0711
Z0701
Z0702
Z0703
W4
P23
ADSTB#1
ADSTB#0
PSI#
VID5
VID4
VID3
VID2
VID1
VID0
BCLK1
BCLK0
COMP3
COMP2
COMP1
COMP0
DBR#
THERMDA
THERMDC
TEST1
TEST2
TEST3
VCCSENSE
VSSSENSE
CPU_VID[0..5]
CPU_VID[0..5] 24
HADSTB#1 10
HADSTB#0 10
CPU_PSI# 9
BCLK1 27
BCLK0 27
ITP_DBRST# 9,41
P0_THRMDP 9
P0_THRMDN 9
Z0705
Z0706
ROUTE
DIFFERENTIAL
5:25
R103
NA(1.2K) -5%
YAGEO,RALEC
M-R0603
R132
NA(1.2K) -5%
YAGEO,RALEC
M-R0603
R50
1.2K -5%
YAGEO,RALEC
M-R0603
TEST1
DISABLE DPWR#
R66
NA(54.9) -1%
YAGEO,RALEC
M-R0603
R65
NA(54.9) -1%
YAGEO,RALEC
M-R0603
C274
NA(0.01uF)
Samsung,Yageo
25V 20%
M-C0603
C60
NA(0.01uF)
Samsung,Yageo
25V 20%
M-C0603
U9B
10 HADS#
10 HBNR#
10 BREQ#0
10 HDBSY#
10 HDRDY#
10 HDSTBP#3
10 HDSTBP#2
10 HDSTBP#1
10 HDSTBP#0
10 HRS#2
10 HRS#1
10 HRS#0
10 HBPRI#
10 HDEFER#
9 HBPM#5
9,10 HCPURST#
10 HTRDY#
BPM#3
BPM#2
BPM#1
BPM#0
DSTBN#3
DSTBN#2
DSTBN#1
DSTBN#0
REQ#4
REQ#3
REQ#2
REQ#1
REQ#0
HIT#
HITM#
LOCK#
PRDY#
HREQ#[0..4]
HREQ#[0..4] 10
HBPM#3 9
HBPM#2 9
HBPM#1 9
HBPM#0 9
HDSTBN#3 10
HDSTBN#2 10
HDSTBN#1 10
HDSTBN#0 10
HIT# 10
HITM# 10
HLOCK# 10
HBPM#4 9
Pentium M
R360
54.9 -1%
YAGEO,RALEC
M-R0603
R361
27.4 -1%
YAGEO,RALEC
M-R0603
R131
54.9 -1%
YAGEO,RALEC
M-R0603
R133
27.4 -1%
YAGEO,RALEC
M-R0603
CPU_COMP3
CPU_COMP2
CPU_COMP1
CPU_COMP0
10 HD#[0..63]
HD#[0..63]
U9A
Pentium M
HA#[3..31]
HA#[3..31] 10
HDBI#[0..3]
HDBI#[0..3] 10
FERR# 9
IERR#
PROCHOT# 9
THERMTRIP# 41
TCK 9
TDI 9
TMS 9
TRST# 9
TDO 9
R24
300 -5%
YAGEO,RALEC
M-R0603
R61
150 -5%
YAGEO,RALEC
M-R0603
R48
56 -5%
YAGEO,RALEC
M-R0603
R106
56 -5%
YAGEO,RALEC
M-R0603
R26
200 -5%
YAGEO,RALEC
M-R0603
R58
200 -5%
YAGEO,RALEC
M-R0603
R23
56 -5%
YAGEO,RALEC
M-R0603
R105
56 -5%
YAGEO,RALEC
M-R0603
INTEL CORPORATION
Title Performance Communications Appliance for the Intel(R) Pen
Size
Document Number
CPU HOST BUS & MISC SIGNALS
Rev A0
Date: Wednesday, April 09, 2003
Sheet 7 of 41

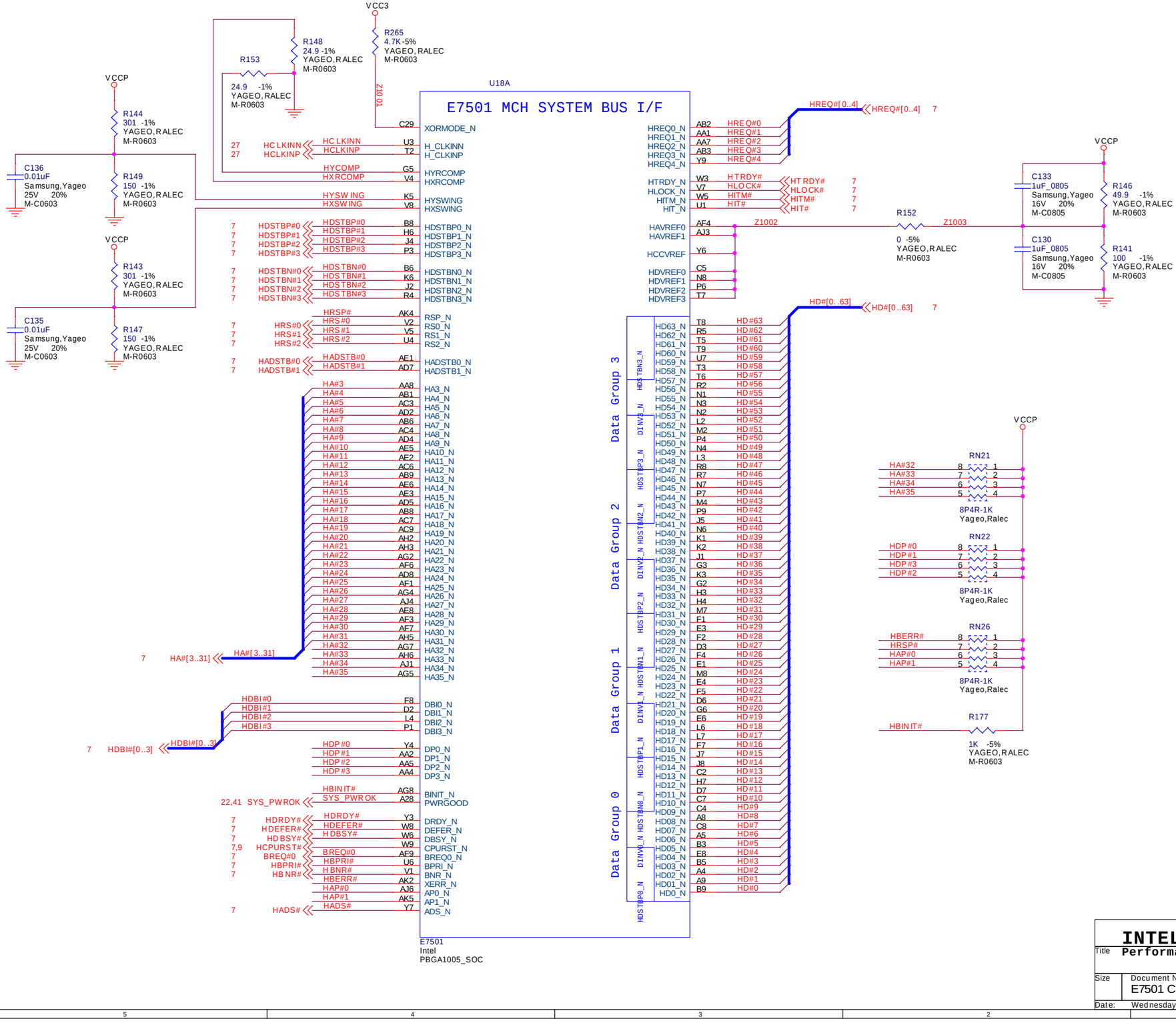

U9D
E22 AD25 AD22 A20 AD19 AD17 AD15 AD13 AD11 AD1 AC8 AA10 AC5 AC24 AC21 A2 AC2 AC18 AC16 AC14 AC12 AC10 E20 AB9 AB7 AB5 AB3 A17 AB26 AB23 AB21 AB19 AB17 E18 AB15 AB13 AB11 AA8 AA6 A14 Y5 Y24 AA4 Y21 E16 A11 AF24 AF13
GND
D11 C7 C4 A8 E8 C24 C21 C18 C15 C13 C10 C1 B9 B6 B3 E6 A5 B25 B22 B19 B16 B12 AF9 AF5 AF21 AF2 E3 A26 AF19 AF17 AF15 AF11 AE8 AE6 AE3 AE26 AE23 E25 AE20 A23 AE18 AE16 AE14 AE12 AE10 AD9 AD7 AD4
Pentium M
U9E
L3 L25 L22 K5 K26 K23 D7 K21 K2 J6 AA16 J4 J24 J22 J1 H5 H3 D5 H25 H21 G6 G26 AA14 G23 G22 G2 F9 F7 D26 F5 F4 F24 F21 F19 AA12 F17 F15 F13 F11 AA1 D23 F1 D21 D2 D19 D17 D15 D13
GND
Y2 W6 W3 W26 W23 W22 V5 V4 V25 AA25 E14 V21 V1 U6 U24 U22 U2 T5 T3 T26 T23 E12 AA22 T21 R6 R4 R25 R22 R1 P5 P24 P21 E10 P2 AA20 N6 N3 N26 N23 N22 M5 M4 M24 D9 M21 M1 AA18 L6
Pentium M
CPU VCC
U9G
AF18 AE16 AE14 AE12 AE10 AF8 AE19 AE17 AE15 AE13 AE11 AE9 AD18 AD16 AD14 AD12 AD10 AD8 AC19 AC17 AC15 AC13 AC11 AC9 AB22 AB20 AB18 AB16 AB14 AB12 AB10 AB8 AB6 AA21 AA19 AA17 AA15 AA13 AA11 AA9 AA7 AA5 Y22 Y6 W21 W5 V22 V6 U5 K22 J21 J5 H22 H6 G21 G5 F22 F20 F18 F8 F6 E21 E19 E17 E9 E7 E5 D22 D20 D18 D8 D6
VCC
VCCP
VCC1_05 VCC1_06 VCC1_07 VCC1_08 VCC1_09 VCC1_10 VCC1_11 VCC1_12 VCC1_13 VCC1_14 VCC1_15 VCC1_16 VCC1_17 VCC1_18 VCC1_19 VCC1_20 VCC1_21 VCC1_22 VCC1_23 VCC1_24 VCC1_25 VCC1_26 VCC1_27 VCC1_28 VCC1_29
U21 T22 T6 R21 R5 P22 P6 N21 N5 M22 M6 L21 L5 K6 F16 F14 F12 F10 E15 E13 E11 D16 D14 D12 D10
RESERVED1 RESERVED2 RESERVED3 RESERVED4
AF7 B2 C14 C3
Z0801 Z0802 Z0803 Z0804
TP135 TP136 TP137 TP138
Pentium M
PIN GND1~4 =GND
VCCP
C125 6TPB330M Sanyo M-D7343
C127 6TPB330M Sanyo M-D7343
BC32 0.1uF Samsung,Yageo 25V 20% M-C0603
BC33 0.1uF Samsung,Yageo 25V 20% M-C0603
BC31 0.1uF Samsung,Yageo 25V 20% M-C0603
BC28 0.1uF Samsung,Yageo 25V 20% M-C0603
BC225 0.1uF Samsung,Yageo 25V 20% M-C0603
BC34 0.1uF Samsung,Yageo 25V 20% M-C0603
BC228 0.1uF Samsung,Yageo 25V 20% M-C0603
BC226 0.1uF Samsung,Yageo 25V 20% M-C0603
BC224 0.1uF Samsung,Yageo 25V 20% M-C0603
BC221 0.1uF Samsung,Yageo 25V 20% M-C0603
BC220 0.1uF Samsung,Yageo 25V 20% M-C0603
CPU VCC
C52 6TPB150M Sanyo M-D7343
C40 6TPB150M Sanyo M-D7343
C57 6TPB150M Sanyo M-D7343
C44 6TPB150M Sanyo M-D7343
C74 6TPB150M Sanyo M-D7343
C62 6TPB150M Sanyo M-D7343
C85 6TPB150M Sanyo M-D7343
C77 6TPB150M Sanyo M-D7343
C88 6TPB150M Sanyo M-D7343
C90 6TPB150M Sanyo M-D7343
C50 6TPB150M Sanyo M-D7343
C94 6TPB150M Sanyo M-D7343
CPU VCC
C290 2.2uF_1206 Samsung,Yageo 10V 20% M-C1206
C59 2.2uF_1206 Samsung,Yageo 10V 20% M-C1206
C267 2.2uF_1206 Samsung,Yageo 10V 20% M-C1206
C289 2.2uF_1206 Samsung,Yageo 10V 20% M-C1206
C288 2.2uF_1206 Samsung,Yageo 10V 20% M-C1206
C278 2.2uF_1206 Samsung,Yageo 10V 20% M-C1206
C86 2.2uF_1206 Samsung,Yageo 10V 20% M-C1206
C84 2.2uF_1206 Samsung,Yageo 10V 20% M-C1206
C58 2.2uF_1206 Samsung,Yageo 10V 20% M-C1206
C280 2.2uF_1206 Samsung,Yageo 10V 20% M-C1206
C287 2.2uF_1206 Samsung,Yageo 10V 20% M-C1206
C65 2.2uF_1206 Samsung,Yageo 10V 20% M-C1206
C73 2.2uF_1206 Samsung,Yageo 10V 20% M-C1206
C79 2.2uF_1206 Samsung,Yageo 10V 20% M-C1206
C87 2.2uF_1206 Samsung,Yageo 10V 20% M-C1206
INTEL CORPORATION
Title Performance Communications Appliance for the Intel(R) Pen
Size
Document Number
CPU POWER, GND & DECOUPLING
Rev A0
Date: Wednesday, April 09, 2003
Sheet 8 of 41

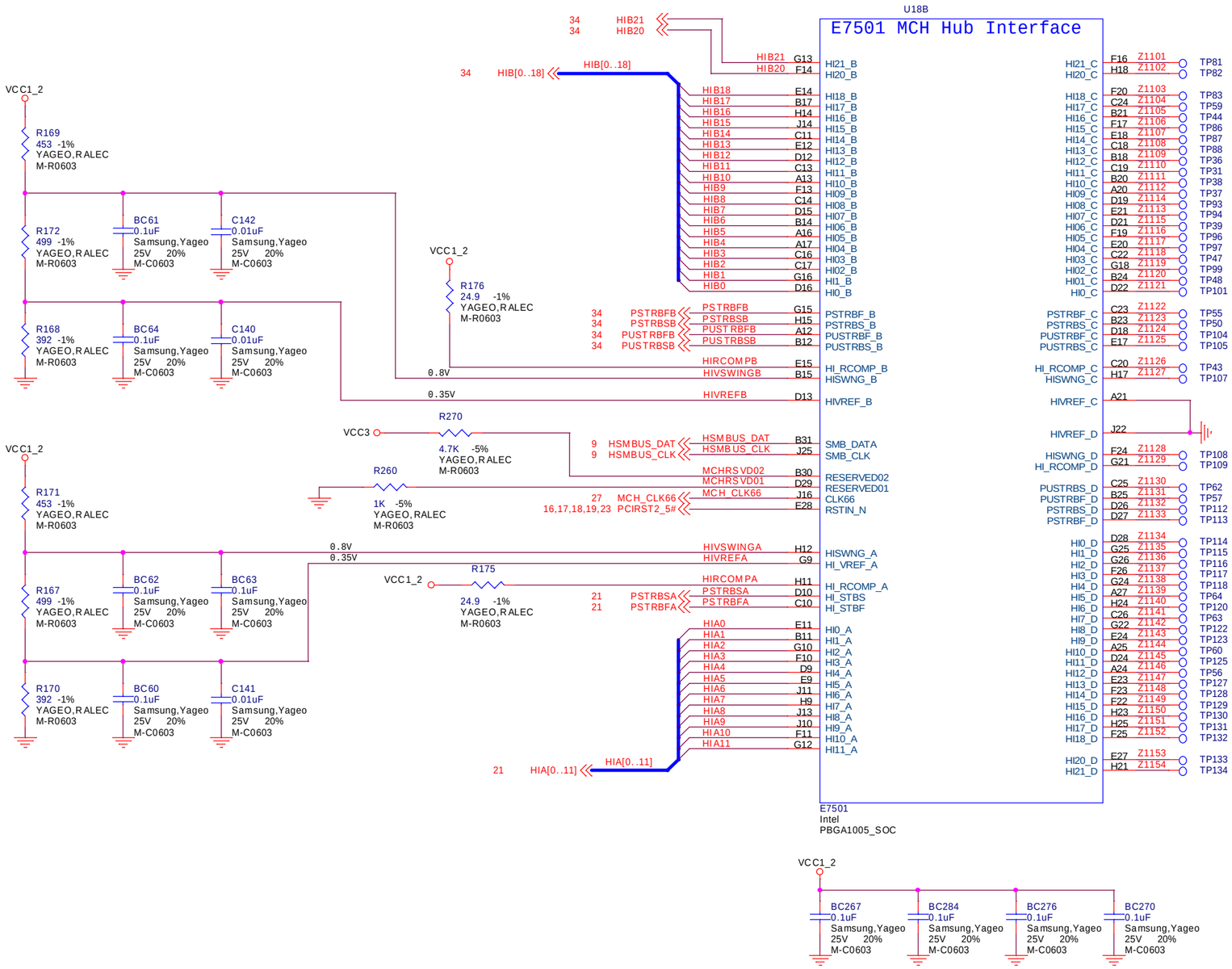


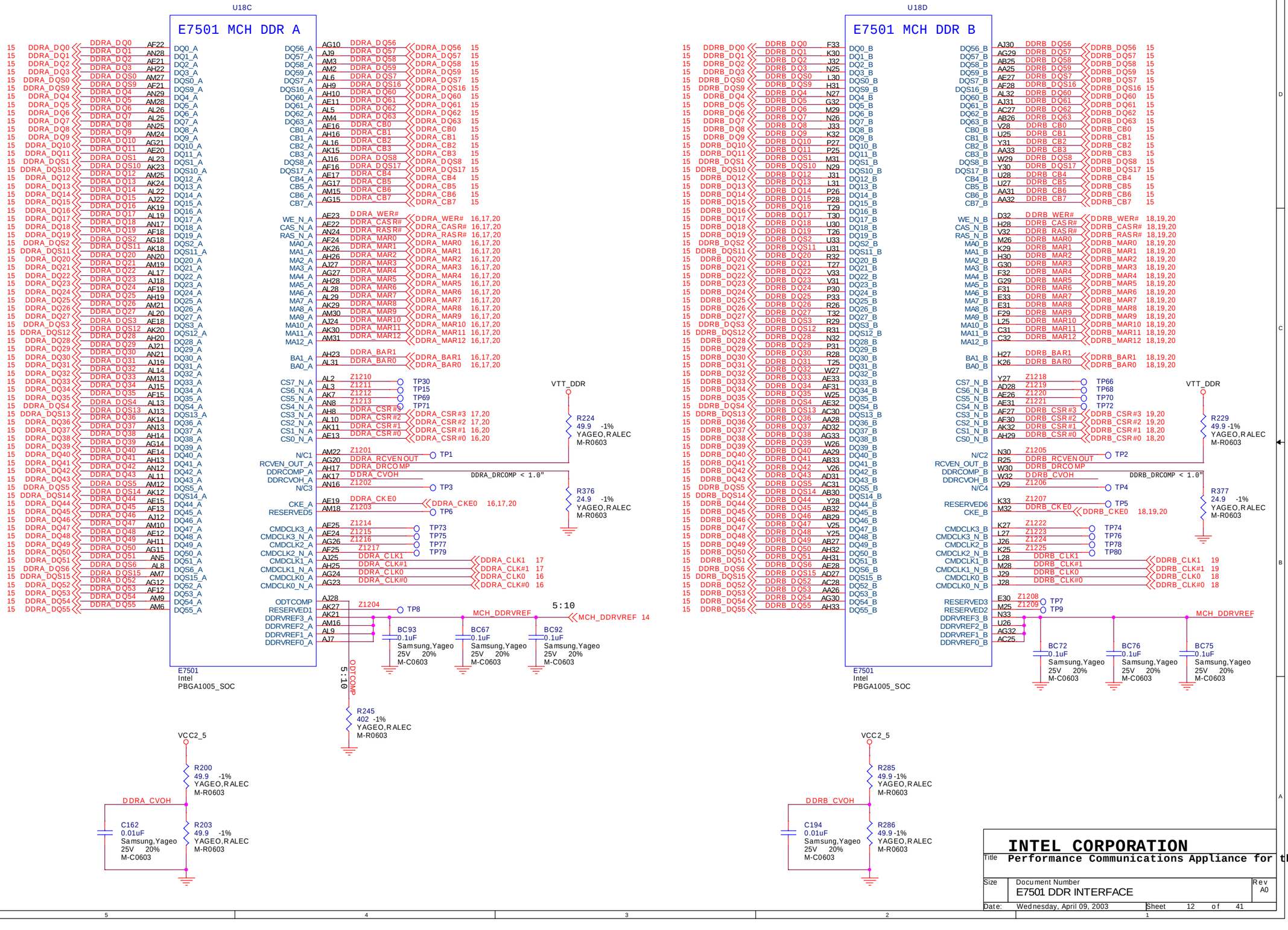


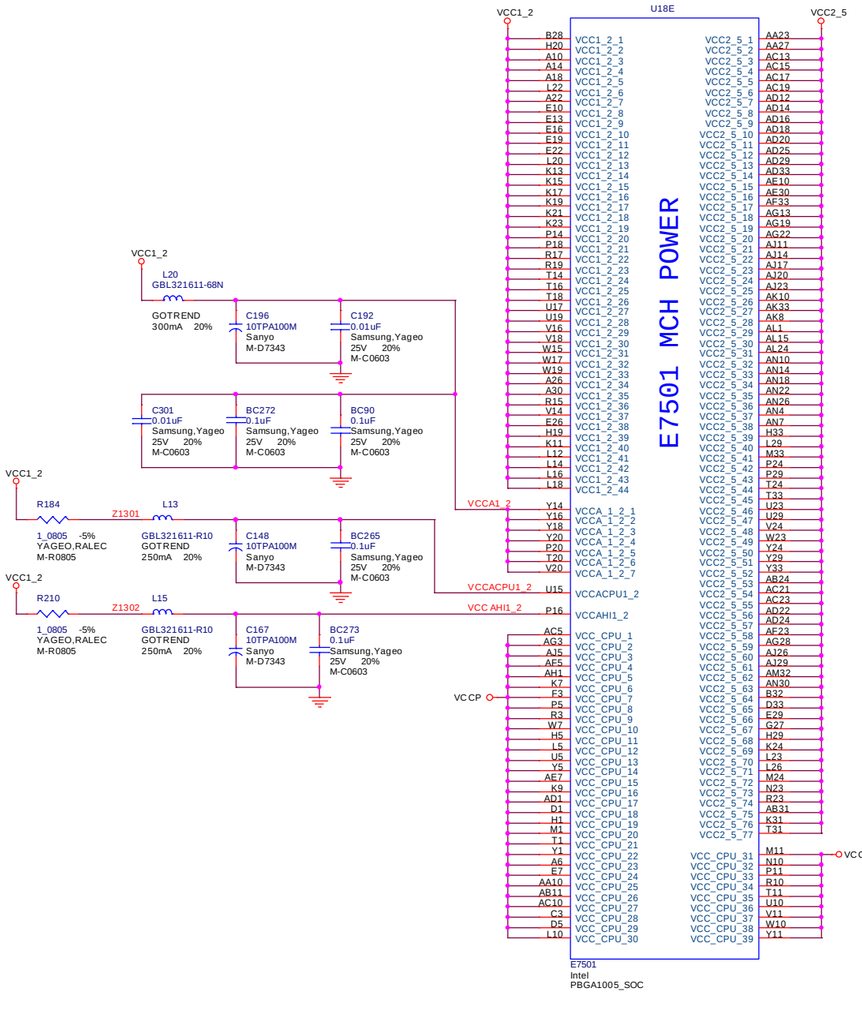
INTEL CORPORATION

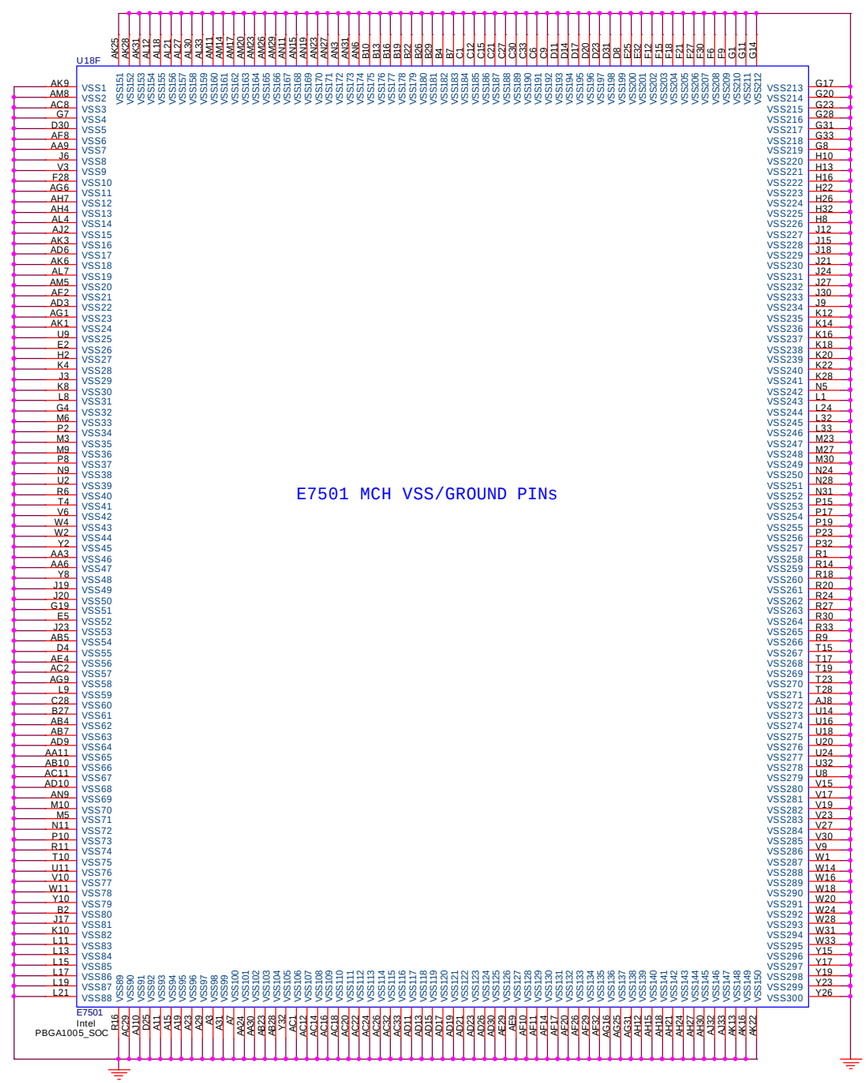
Title	Performance Communications Appliance for the Intel(R) Pen	
Size	Document Number: ITP,CPU MISC.,	Rev: A0
Date: Wednesday, April 09, 2003	Sheet 9 of 41	


U18A
E7501 MCH SYSTEM BUS I/F
E7501
Intel
PBGA1005_SOC
Data Group 3
Data Group 2
Data Group 1
Data Group 0
VCC3
VCCP
R148 24.9 -1% YAGEO,RALEC M-R0603
R153 24.9 -1% YAGEO,RALEC M-R0603
R265 4.7K -5% YAGEO,RALEC M-R0603
Z1001
R144 301 -1% YAGEO,RALEC M-R0603
R149 150 -1% YAGEO,RALEC M-R0603
R143 301 -1% YAGEO,RALEC M-R0603
R147 150 -1% YAGEO,RALEC M-R0603
C136 0.01uF Samsung,Yageo 25V 20% M-C0603
C135 0.01uF Samsung,Yageo 25V 20% M-C0603
XORMODE_N
H_CLKINN
H_CLKINP
HYRCOMP
HXRCOMP
HYSWING
HXSWING
HDSTBP0_N
HDSTBP1_N
HDSTBP2_N
HDSTBP3_N
HDSTBN0_N
HDSTBN1_N
HDSTBN2_N
HDSTBN3_N
RSP_N
RS0_N
RS1_N
RS2_N
HADSTB0_N
HADSTB1_N
HA3_N
HA4_N
HA5_N
HA6_N
HA7_N
HA8_N
HA9_N
HA10_N
HA11_N
HA12_N
HA13_N
HA14_N
HA15_N
HA16_N
HA17_N
HA18_N
HA19_N
HA20_N
HA21_N
HA22_N
HA23_N
HA24_N
HA25_N
HA26_N
HA27_N
HA28_N
HA29_N
HA30_N
HA31_N
HA32_N
HA33_N
HA34_N
HA35_N
DBI0_N
DBI1_N
DBI2_N
DBI3_N
DP0_N
DP1_N
DP2_N
DP3_N
BINIT_N
PWRGOOD
DRDY_N
DEFER_N
DBSY_N
CPURST_N
BREQ0_N
BPRI_N
BNR_N
XERR_N
AP0_N
AP1_N
ADS_N
HREQ0_N
HREQ1_N
HREQ2_N
HREQ3_N
HREQ4_N
HTRDY_N
HLOCK_N
HITM_N
HIT_N
HAVREF0
HAVREF1
HCCVREF
HDVREF0
HDVREF1
HDVREF2
HDVREF3
HD63_N
HD62_N
HD61_N
HD60_N
HD59_N
HD58_N
HD57_N
HD56_N
HD55_N
HD54_N
HD53_N
HD52_N
HD51_N
HD50_N
HD49_N
HD48_N
HD47_N
HD46_N
HD45_N
HD44_N
HD43_N
HD42_N
HD41_N
HD40_N
HD39_N
HD38_N
HD37_N
HD36_N
HD35_N
HD34_N
HD33_N
HD32_N
HD31_N
HD30_N
HD29_N
HD28_N
HD27_N
HD26_N
HD25_N
HD24_N
HD23_N
HD22_N
HD21_N
HD20_N
HD19_N
HD18_N
HD17_N
HD16_N
HD15_N
HD14_N
HD13_N
HD12_N
HD11_N
HD10_N
HD09_N
HD08_N
HD07_N
HD06_N
HD05_N
HD04_N
HD03_N
HD02_N
HD01_N
HD0_N
HREQ#[0..4]
HD#[0..63]
HA#[3..31]
HDBI#[0..3]
HDP#0
HDP#1
HDP#2
HDP#3
HBINIT#
SYS_PWROK
HDRDY#
HDEFER#
HDBSY#
HCPURST#
BREQ#0
HBPRI#
HBNR#
HBERR#
HAP#0
HAP#1
HADS#
Z1002
R152 0 -5% YAGEO,RALEC M-R0603
Z1003
C133 1uF_0805 Samsung,Yageo 16V 20% M-C0805
C130 1uF_0805 Samsung,Yageo 16V 20% M-C0805
R146 49.9 -1% YAGEO,RALEC M-R0603
R141 100 -1% YAGEO,RALEC M-R0603
RN21
RN22
RN26
8P4R-1K Yageo,Ralec
R177 1K -5% YAGEO,RALEC M-R0603
INTEL CORPORATION
Title Performance Communications Appliance for the Intel(R) Pen
Size
Document Number E7501 CPU INTERFACE
Rev A0
Date: Wednesday, April 09, 2003
Sheet 10 of 41


U18B
E7501 MCH Hub Interface
HIB21
HIB20
HIB[0..18]
HIB18
HIB17
HIB16
HIB15
HIB14
HIB13
HIB12
HIB11
HIB10
HIB9
HIB8
HIB7
HIB6
HIB5
HIB4
HIB3
HIB2
HIB1
HIB0
PSTRBFB
PSTRBSB
PUSTRBFB
PUSTRBSB
HIRCOMPB
HIVSWINGB
HIVREFB
HSMBUS_DAT
HSMBUS_CLK
MCHRSVD02
MCHRSVD01
MCH_CLK66
PCIRST2_5#
HIVSWINGA
HIVREFA
HIRCOMPA
PSTRBSA
PSTRBFA
HIA[0..11]
HI21_B
HI20_B
HI18_B
HI17_B
HI16_B
HI15_B
HI14_B
HI13_B
HI12_B
HI11_B
HI10_B
HI09_B
HI08_B
HI07_B
HI06_B
HI05_B
HI04_B
HI03_B
HI02_B
HI1_B
HI0_B
PSTRBF_B
PSTRBS_B
PUSTRBF_B
PUSTRBS_B
HI_RCOMP_B
HISWNG_B
HIVREF_B
SMB_DATA
SMB_CLK
RESERVED02
RESERVED01
CLK66
RSTIN_N
HISWNG_A
HI_VREF_A
HI_RCOMP_A
HI_STBS
HI_STBF
HI0_A
HI1_A
HI2_A
HI3_A
HI4_A
HI5_A
HI6_A
HI7_A
HI8_A
HI9_A
HI10_A
HI11_A
E7501
Intel
PBGA1005_SOC
VCC1_2
VCC3
0.8V
0.35V
R169 453 -1% YAGEO,RALEC M-R0603
R172 499 -1% YAGEO,RALEC M-R0603
R168 392 -1% YAGEO,RALEC M-R0603
R171 453 -1% YAGEO,RALEC M-R0603
R167 499 -1% YAGEO,RALEC M-R0603
R170 392 -1% YAGEO,RALEC M-R0603
R176 24.9 -1% YAGEO,RALEC M-R0603
R270 4.7K -5% YAGEO,RALEC M-R0603
R260 1K -5% YAGEO,RALEC M-R0603
R175 24.9 -1% YAGEO,RALEC M-R0603
BC61 0.1uF Samsung,Yageo 25V 20% M-C0603
BC64 0.1uF Samsung,Yageo 25V 20% M-C0603
BC62 0.1uF Samsung,Yageo 25V 20% M-C0603
BC60 0.1uF Samsung,Yageo 25V 20% M-C0603
BC63 0.1uF Samsung,Yageo 25V 20% M-C0603
C142 0.01uF Samsung,Yageo 25V 20% M-C0603
C140 0.01uF Samsung,Yageo 25V 20% M-C0603
C141 0.01uF Samsung,Yageo 25V 20% M-C0603
BC267 0.1uF Samsung,Yageo 25V 20% M-C0603
BC284 0.1uF Samsung,Yageo 25V 20% M-C0603
BC276 0.1uF Samsung,Yageo 25V 20% M-C0603
BC270 0.1uF Samsung,Yageo 25V 20% M-C0603
HI21_C HI20_C HI18_C HI17_C HI16_C HI15_C HI14_C HI13_C HI12_C HI11_C HI10_C HI09_C HI08_C HI07_C HI06_C HI05_C HI04_C HI03_C HI02_C HI01_C HI0_C
PSTRBF_C PSTRBS_C PUSTRBF_C PUSTRBS_C
HI_RCOMP_C HISWNG_C HIVREF_C HIVREF_D
HISWNG_D HI_RCOMP_D PUSTRBS_D PUSTRBF_D PSTRBS_D PSTRBF_D
HI0_D HI1_D HI2_D HI3_D HI4_D HI5_D HI6_D HI7_D HI8_D HI9_D HI10_D HI11_D HI12_D HI13_D HI14_D HI15_D HI16_D HI17_D HI18_D HI20_D HI21_D
TP81 TP82 TP83 TP59 TP44 TP86 TP87 TP88 TP36 TP31 TP38 TP37 TP93 TP94 TP39 TP96 TP97 TP47 TP99 TP48 TP101 TP55 TP50 TP104 TP105 TP43 TP107 TP108 TP109 TP62 TP57 TP112 TP113 TP114 TP115 TP116 TP117 TP118 TP64 TP120 TP63 TP122 TP123 TP60 TP125 TP56 TP127 TP128 TP129 TP130 TP131 TP132 TP133 TP134
INTEL CORPORATION
Performance Communications Appliance for the Intel(R) Pen
E7501 HUB LINK
Wednesday, April 09, 2003
Sheet 11 of 41
Rev A0

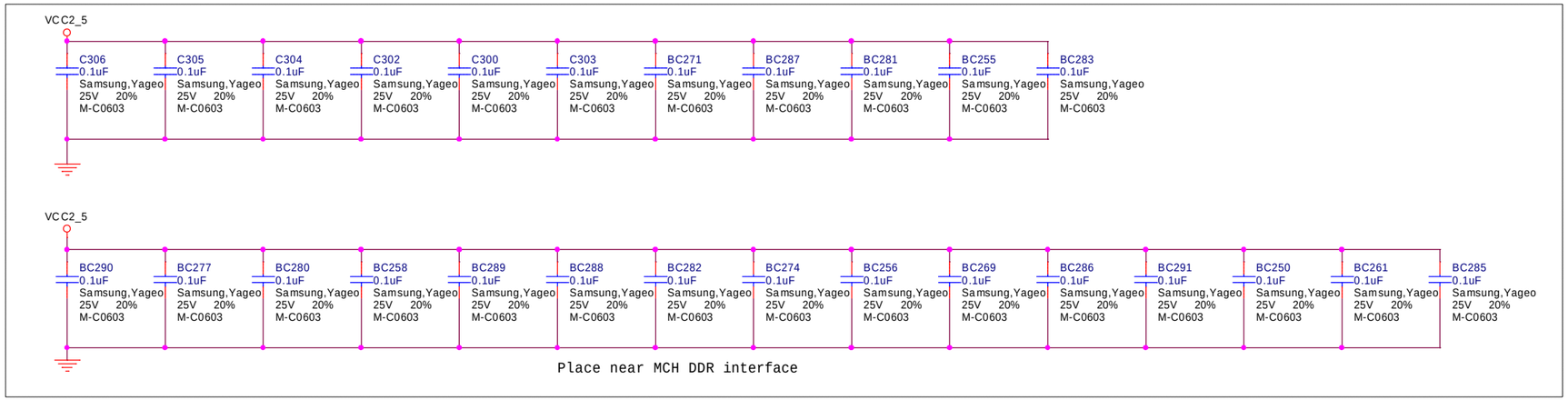

U18C
E7501 MCH DDR A
E7501
Intel
PBGA1005_SOC
U18D
E7501 MCH DDR B
E7501
Intel
PBGA1005_SOC
VTT_DDR
R224
49.9 -1%
YAGEO,RALEC
M-R0603
R376
24.9 -1%
YAGEO,RALEC
M-R0603
DDRA_DRCOMP < 1.0"
R245
402 -1%
YAGEO,RALEC
M-R0603
R200
49.9 -1%
YAGEO,RALEC
M-R0603
R203
49.9 -1%
YAGEO,RALEC
M-R0603
C162
0.01uF
Samsung,Yageo
25V 20%
M-C0603
BC93
0.1uF
Samsung,Yageo
25V 20%
M-C0603
BC67
0.1uF
Samsung,Yageo
25V 20%
M-C0603
BC92
0.1uF
Samsung,Yageo
25V 20%
M-C0603
R229
49.9 -1%
YAGEO,RALEC
M-R0603
R377
24.9 -1%
YAGEO,RALEC
M-R0603
DDRB_DRCOMP < 1.0"
R285
49.9 -1%
YAGEO,RALEC
M-R0603
R286
49.9 -1%
YAGEO,RALEC
M-R0603
C194
0.01uF
Samsung,Yageo
25V 20%
M-C0603
BC72
0.1uF
Samsung,Yageo
25V 20%
M-C0603
BC76
0.1uF
Samsung,Yageo
25V 20%
M-C0603
BC75
0.1uF
Samsung,Yageo
25V 20%
M-C0603
INTEL CORPORATION
Title Performance Communications Appliance for the Intel(R) Pen
Size Document Number E7501 DDR INTERFACE Rev A0
Date: Wednesday, April 09, 2003 Sheet 12 of 41

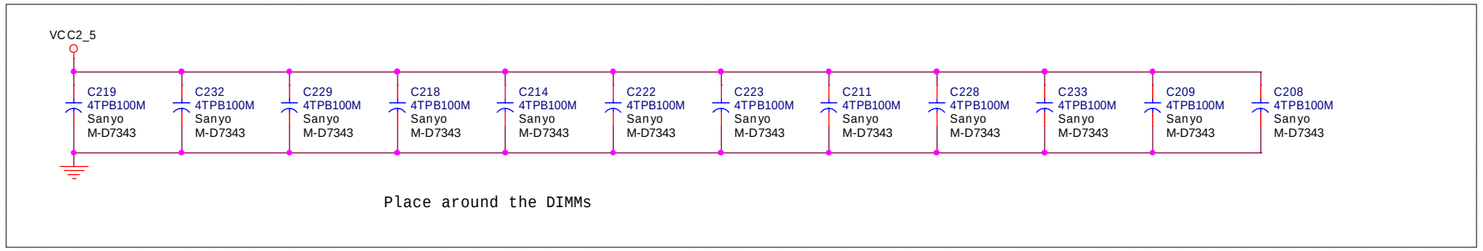


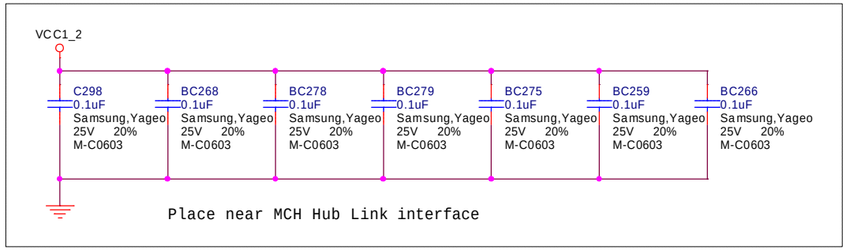


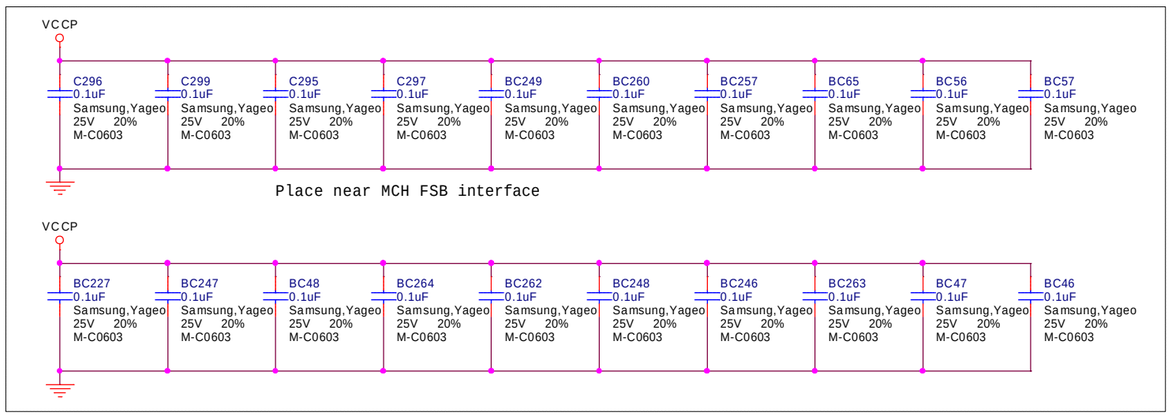
INTEL CORPORATION

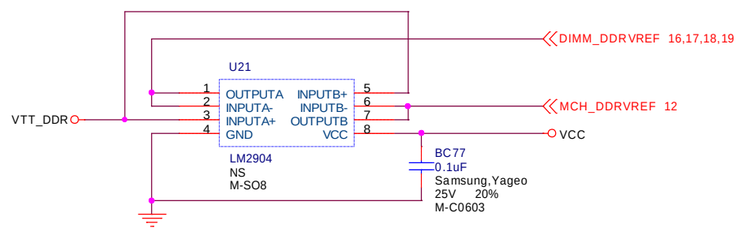
Title	Performance Communications Appliance for the Intel(R) Pentium(R) I	
Size	Document Number: E7501 POWER/GND	Rev: A0
Date: Wednesday, April 09, 2003	Sheet 13 of 41	











INTEL CORPORATION

Title: Performance Communications Appliance for the Intel(R) Penti

Size	Document Number	Rev
	MCH BYPASS CAPACITORS	A0

Date: Wednesday, April 09, 2003 Sheet 14 of 41

RN81
12 DDRA_DQ2 — DDRA_DQR2 16,17,20
12 DDRA_DQ6 — DDRA_DQR6 16,17,20
12 DDRA_DQS9 — DDRA_DQSR9 16,17,20
12 DDRA_DQS0 — DDRA_DQSR0 16,17,20
8P4R-10
Yageo,Ralec

RN82
12 DDRA_DQ1 — DDRA_DQR1 16,17,20
12 DDRA_DQ0 — DDRA_DQR0 16,17,20
12 DDRA_DQ5 — DDRA_DQR5 16,17,20
12 DDRA_DQ4 — DDRA_DQR4 16,17,20
8P4R-10
Yageo,Ralec

RN78
12 DDRA_DQ15 — DDRA_DQR15 16,17,20
12 DDRA_DQ14 — DDRA_DQR14 16,17,20
12 DDRA_DQ11 — DDRA_DQR11 16,17,20
12 DDRA_DQ10 — DDRA_DQR10 16,17,20
8P4R-10
Yageo,Ralec

RN79
12 DDRA_DQS1 — DDRA_DQSR1 16,17,20
12 DDRA_DQS10 — DDRA_DQSR10 16,17,20
12 DDRA_DQ9 — DDRA_DQR9 16,17,20
12 DDRA_DQ13 — DDRA_DQR13 16,17,20
8P4R-10
Yageo,Ralec

RN76
12 DDRA_DQ18 — DDRA_DQR18 16,17,20
12 DDRA_DQ22 — DDRA_DQR22 16,17,20
12 DDRA_DQS2 — DDRA_DQSR2 16,17,20
12 DDRA_DQS11 — DDRA_DQSR11 16,17,20
8P4R-10
Yageo,Ralec

RN75
12 DDRA_DQ24 — DDRA_DQR24 16,17,20
12 DDRA_DQ28 — DDRA_DQR28 16,17,20
12 DDRA_DQ19 — DDRA_DQR19 16,17,20
12 DDRA_DQ23 — DDRA_DQR23 16,17,20
8P4R-10
Yageo,Ralec

RN74
12 DDRA_DQS3 — DDRA_DQSR3 16,17,20
12 DDRA_DQS12 — DDRA_DQSR12 16,17,20
12 DDRA_DQ29 — DDRA_DQR29 16,17,20
12 DDRA_DQ25 — DDRA_DQR25 16,17,20
8P4R-10
Yageo,Ralec

RN73
12 DDRA_DQ31 — DDRA_DQR31 16,17,20
12 DDRA_DQ27 — DDRA_DQR27 16,17,20
12 DDRA_DQ30 — DDRA_DQR30 16,17,20
12 DDRA_DQ26 — DDRA_DQR26 16,17,20
8P4R-10
Yageo,Ralec

RN69
12 DDRA_DQ37 — DDRA_DQR37 16,17,20
12 DDRA_DQ33 — DDRA_DQR33 16,17,20
12 DDRA_DQ36 — DDRA_DQR36 16,17,20
12 DDRA_DQ32 — DDRA_DQR32 16,17,20
8P4R-10
Yageo,Ralec

RN68
12 DDRA_DQ38 — DDRA_DQR38 16,17,20
12 DDRA_DQ34 — DDRA_DQR34 16,17,20
12 DDRA_DQS4 — DDRA_DQSR4 16,17,20
12 DDRA_DQS13 — DDRA_DQSR13 16,17,20
8P4R-10
Yageo,Ralec

RN67
12 DDRA_DQ44 — DDRA_DQR44 16,17,20
12 DDRA_DQ40 — DDRA_DQR40 16,17,20
12 DDRA_DQ39 — DDRA_DQR39 16,17,20
12 DDRA_DQ35 — DDRA_DQR35 16,17,20
8P4R-10
Yageo,Ralec

RN66
12 DDRA_DQ42 — DDRA_DQR42 16,17,20
12 DDRA_DQS14 — DDRA_DQSR14 16,17,20
12 DDRA_DQ45 — DDRA_DQR45 16,17,20
12 DDRA_DQ41 — DDRA_DQR41 16,17,20
8P4R-10
Yageo,Ralec

RN63
12 DDRA_DQ51 — DDRA_DQR51 16,17,20
12 DDRA_DQS6 — DDRA_DQSR6 16,17,20
12 DDRA_DQ50 — DDRA_DQR50 16,17,20
12 DDRA_DQS15 — DDRA_DQSR15 16,17,20
8P4R-10
Yageo,Ralec

RN64
12 DDRA_DQ49 — DDRA_DQR49 16,17,20
12 DDRA_DQ48 — DDRA_DQR48 16,17,20
12 DDRA_DQ53 — DDRA_DQR53 16,17,20
12 DDRA_DQ52 — DDRA_DQR52 16,17,20
8P4R-10
Yageo,Ralec

RN60
12 DDRA_DQ63 — DDRA_DQR63 16,17,20
12 DDRA_DQ59 — DDRA_DQR59 16,17,20
12 DDRA_DQ58 — DDRA_DQR58 16,17,20
12 DDRA_DQ62 — DDRA_DQR62 16,17,20
8P4R-10
Yageo,Ralec

RN61
12 DDRA_DQS7 — DDRA_DQSR7 16,17,20
12 DDRA_DQS16 — DDRA_DQSR16 16,17,20
12 DDRA_DQ61 — DDRA_DQR61 16,17,20
12 DDRA_DQ57 — DDRA_DQR57 16,17,20
8P4R-10
Yageo,Ralec

RN80
12 DDRA_DQ8 — DDRA_DQR8 16,17,20
12 DDRA_DQ12 — DDRA_DQR12 16,17,20
12 DDRA_DQ3 — DDRA_DQR3 16,17,20
12 DDRA_DQ7 — DDRA_DQR7 16,17,20
8P4R-10
Yageo,Ralec

RN62
12 DDRA_DQ56 — DDRA_DQR56 16,17,20
12 DDRA_DQ60 — DDRA_DQR60 16,17,20
12 DDRA_DQ55 — DDRA_DQR55 16,17,20
12 DDRA_DQ54 — DDRA_DQR54 16,17,20
8P4R-10
Yageo,Ralec

RN77
12 DDRA_DQ21 — DDRA_DQR21 16,17,20
12 DDRA_DQ17 — DDRA_DQR17 16,17,20
12 DDRA_DQ20 — DDRA_DQR20 16,17,20
12 DDRA_DQ16 — DDRA_DQR16 16,17,20
8P4R-10
Yageo,Ralec

RN65
12 DDRA_DQ43 — DDRA_DQR43 16,17,20
12 DDRA_DQ47 — DDRA_DQR47 16,17,20
12 DDRA_DQ46 — DDRA_DQR46 16,17,20
12 DDRA_DQS5 — DDRA_DQSR5 16,17,20
8P4R-10
Yageo,Ralec

RN70
12 DDRA_CB4 — DDRA_CBR4 16,17,20
12 DDRA_CB5 — DDRA_CBR5 16,17,20
12 DDRA_CB0 — DDRA_CBR0 16,17,20
12 DDRA_CB1 — DDRA_CBR1 16,17,20
8P4R-10
Yageo,Ralec

RN71
12 DDRA_DQS8 — DDRA_DQSR8 16,17,20
12 DDRA_DQS17 — DDRA_DQSR17 16,17,20
12 DDRA_CB2 — DDRA_CBR2 16,17,20
12 DDRA_CB6 — DDRA_CBR6 16,17,20
8P4R-10
Yageo,Ralec

RN72
12 DDRA_CB3 — DDRA_CBR3 16,17,20
12 DDRA_CB7 — DDRA_CBR7 16,17,20
8P4R-10
Yageo,Ralec

RN55
12 DDRB_DQ2 — DDRB_DQR2 18,19,20
12 DDRB_DQ6 — DDRB_DQR6 18,19,20
12 DDRB_DQS9 — DDRB_DQSR9 18,19,20
12 DDRB_DQS0 — DDRB_DQSR0 18,19,20
8P4R-10
Yageo,Ralec

RN56
12 DDRB_DQ1 — DDRB_DQR1 18,19,20
12 DDRB_DQ0 — DDRB_DQR0 18,19,20
12 DDRB_DQ5 — DDRB_DQR5 18,19,20
12 DDRB_DQ4 — DDRB_DQR4 18,19,20
8P4R-10
Yageo,Ralec

RN52
12 DDRB_DQ15 — DDRB_DQR15 18,19,20
12 DDRB_DQ14 — DDRB_DQR14 18,19,20
12 DDRB_DQ11 — DDRB_DQR11 18,19,20
12 DDRB_DQ10 — DDRB_DQR10 18,19,20
8P4R-10
Yageo,Ralec

RN53
12 DDRB_DQS1 — DDRB_DQSR1 18,19,20
12 DDRB_DQS10 — DDRB_DQSR10 18,19,20
12 DDRB_DQ9 — DDRB_DQR9 18,19,20
12 DDRB_DQ13 — DDRB_DQR13 18,19,20
8P4R-10
Yageo,Ralec

RN50
12 DDRB_DQ18 — DDRB_DQR18 18,19,20
12 DDRB_DQ22 — DDRB_DQR22 18,19,20
12 DDRB_DQS2 — DDRB_DQSR2 18,19,20
12 DDRB_DQS11 — DDRB_DQSR11 18,19,20
8P4R-10
Yageo,Ralec

RN49
12 DDRB_DQ24 — DDRB_DQR24 18,19,20
12 DDRB_DQ28 — DDRB_DQR28 18,19,20
12 DDRB_DQ19 — DDRB_DQR19 18,19,20
12 DDRB_DQ23 — DDRB_DQR23 18,19,20
8P4R-10
Yageo,Ralec

RN48
12 DDRB_DQ25 — DDRB_DQR25 18,19,20
12 DDRB_DQ29 — DDRB_DQR29 18,19,20
12 DDRB_DQS12 — DDRB_DQSR12 18,19,20
12 DDRB_DQS3 — DDRB_DQSR3 18,19,20
8P4R-10
Yageo,Ralec

RN47
12 DDRB_DQ26 — DDRB_DQR26 18,19,20
12 DDRB_DQ30 — DDRB_DQR30 18,19,20
12 DDRB_DQ27 — DDRB_DQR27 18,19,20
12 DDRB_DQ31 — DDRB_DQR31 18,19,20
8P4R-10
Yageo,Ralec

RN43
12 DDRB_DQ37 — DDRB_DQR37 18,19,20
12 DDRB_DQ33 — DDRB_DQR33 18,19,20
12 DDRB_DQ36 — DDRB_DQR36 18,19,20
12 DDRB_DQ32 — DDRB_DQR32 18,19,20
8P4R-10
Yageo,Ralec

RN42
12 DDRB_DQ38 — DDRB_DQR38 18,19,20
12 DDRB_DQ34 — DDRB_DQR34 18,19,20
12 DDRB_DQS4 — DDRB_DQSR4 18,19,20
12 DDRB_DQS13 — DDRB_DQSR13 18,19,20
8P4R-10
Yageo,Ralec

RN41
12 DDRB_DQ35 — DDRB_DQR35 18,19,20
12 DDRB_DQ39 — DDRB_DQR39 18,19,20
12 DDRB_DQ40 — DDRB_DQR40 18,19,20
12 DDRB_DQ44 — DDRB_DQR44 18,19,20
8P4R-10
Yageo,Ralec

RN40
12 DDRB_DQ42 — DDRB_DQR42 18,19,20
12 DDRB_DQS14 — DDRB_DQSR14 18,19,20
12 DDRB_DQ45 — DDRB_DQR45 18,19,20
12 DDRB_DQ41 — DDRB_DQR41 18,19,20
8P4R-10
Yageo,Ralec

RN38
12 DDRB_DQ49 — DDRB_DQR49 18,19,20
12 DDRB_DQ48 — DDRB_DQR48 18,19,20
12 DDRB_DQ53 — DDRB_DQR53 18,19,20
12 DDRB_DQ52 — DDRB_DQR52 18,19,20
8P4R-10
Yageo,Ralec

RN37
12 DDRB_DQ51 — DDRB_DQR51 18,19,20
12 DDRB_DQS6 — DDRB_DQSR6 18,19,20
12 DDRB_DQ50 — DDRB_DQR50 18,19,20
12 DDRB_DQS15 — DDRB_DQSR15 18,19,20
8P4R-10
Yageo,Ralec

RN34
12 DDRB_DQ62 — DDRB_DQR62 18,19,20
12 DDRB_DQ58 — DDRB_DQR58 18,19,20
12 DDRB_DQ59 — DDRB_DQR59 18,19,20
12 DDRB_DQ63 — DDRB_DQR63 18,19,20
8P4R-10
Yageo,Ralec

RN35
12 DDRB_DQS7 — DDRB_DQSR7 18,19,20
12 DDRB_DQS16 — DDRB_DQSR16 18,19,20
12 DDRB_DQ61 — DDRB_DQR61 18,19,20
12 DDRB_DQ57 — DDRB_DQR57 18,19,20
8P4R-10
Yageo,Ralec

RN54
12 DDRB_DQ8 — DDRB_DQR8 18,19,20
12 DDRB_DQ12 — DDRB_DQR12 18,19,20
12 DDRB_DQ3 — DDRB_DQR3 18,19,20
12 DDRB_DQ7 — DDRB_DQR7 18,19,20
8P4R-10
Yageo,Ralec

RN36
12 DDRB_DQ56 — DDRB_DQR56 18,19,20
12 DDRB_DQ60 — DDRB_DQR60 18,19,20
12 DDRB_DQ55 — DDRB_DQR55 18,19,20
12 DDRB_DQ54 — DDRB_DQR54 18,19,20
8P4R-10
Yageo,Ralec

RN51
12 DDRB_DQ21 — DDRB_DQR21 18,19,20
12 DDRB_DQ20 — DDRB_DQR20 18,19,20
12 DDRB_DQ17 — DDRB_DQR17 18,19,20
12 DDRB_DQ16 — DDRB_DQR16 18,19,20
8P4R-10
Yageo,Ralec

RN39
12 DDRB_DQ43 — DDRB_DQR43 18,19,20
12 DDRB_DQ47 — DDRB_DQR47 18,19,20
12 DDRB_DQ46 — DDRB_DQR46 18,19,20
12 DDRB_DQS5 — DDRB_DQSR5 18,19,20
8P4R-10
Yageo,Ralec

RN44
12 DDRB_CB4 — DDRB_CBR4 18,19,20
12 DDRB_CB5 — DDRB_CBR5 18,19,20
12 DDRB_CB0 — DDRB_CBR0 18,19,20
12 DDRB_CB1 — DDRB_CBR1 18,19,20
8P4R-10
Yageo,Ralec

RN45
12 DDRB_DQS8 — DDRB_DQSR8 18,19,20
12 DDRB_DQS17 — DDRB_DQSR17 18,19,20
12 DDRB_CB2 — DDRB_CBR2 18,19,20
12 DDRB_CB6 — DDRB_CBR6 18,19,20
8P4R-10
Yageo,Ralec

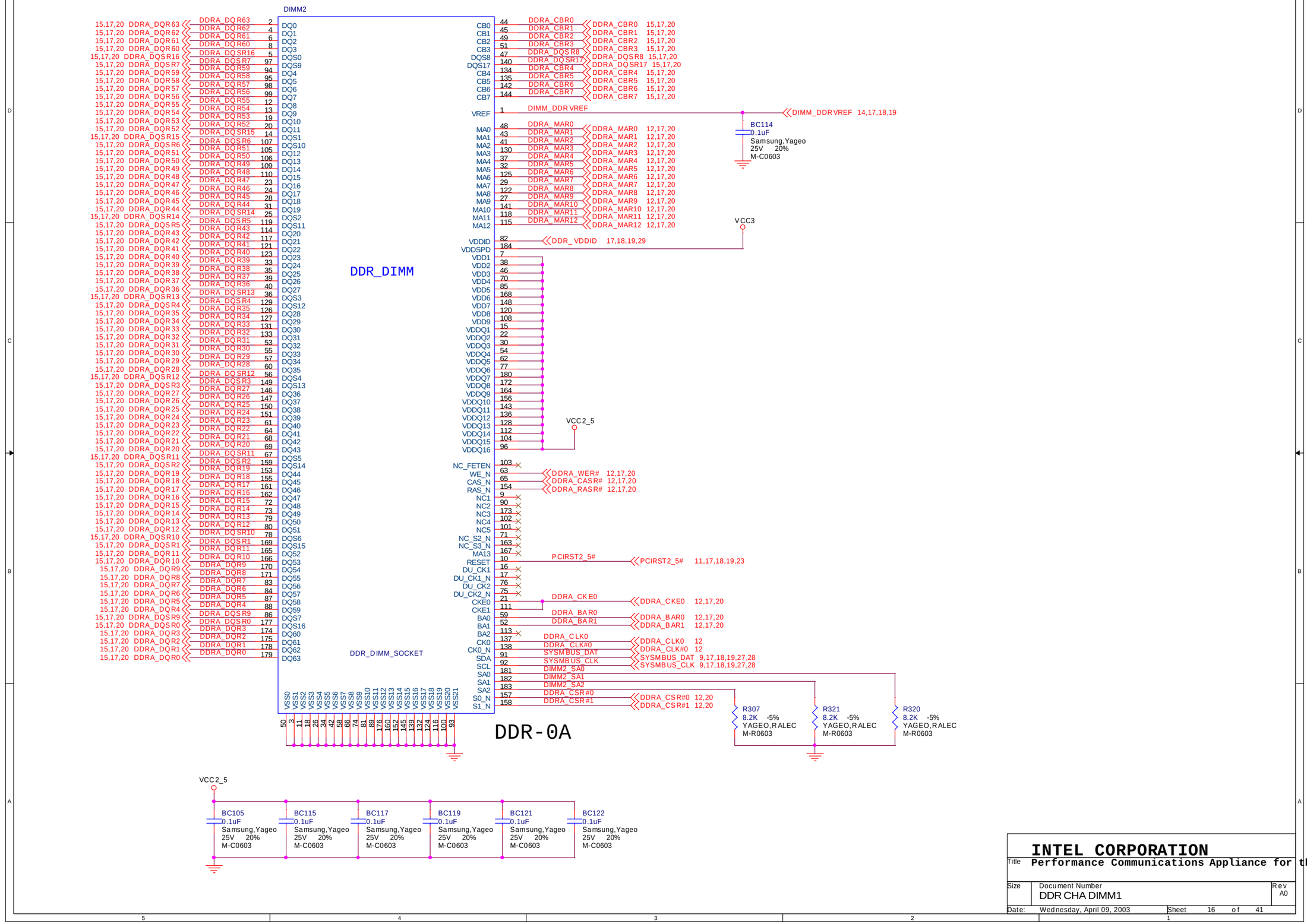
RN46
12 DDRB_CB3 — DDRB_CBR3 18,19,20
12 DDRB_CB7 — DDRB_CBR7 18,19,20
8P4R-10
Yageo,Ralec

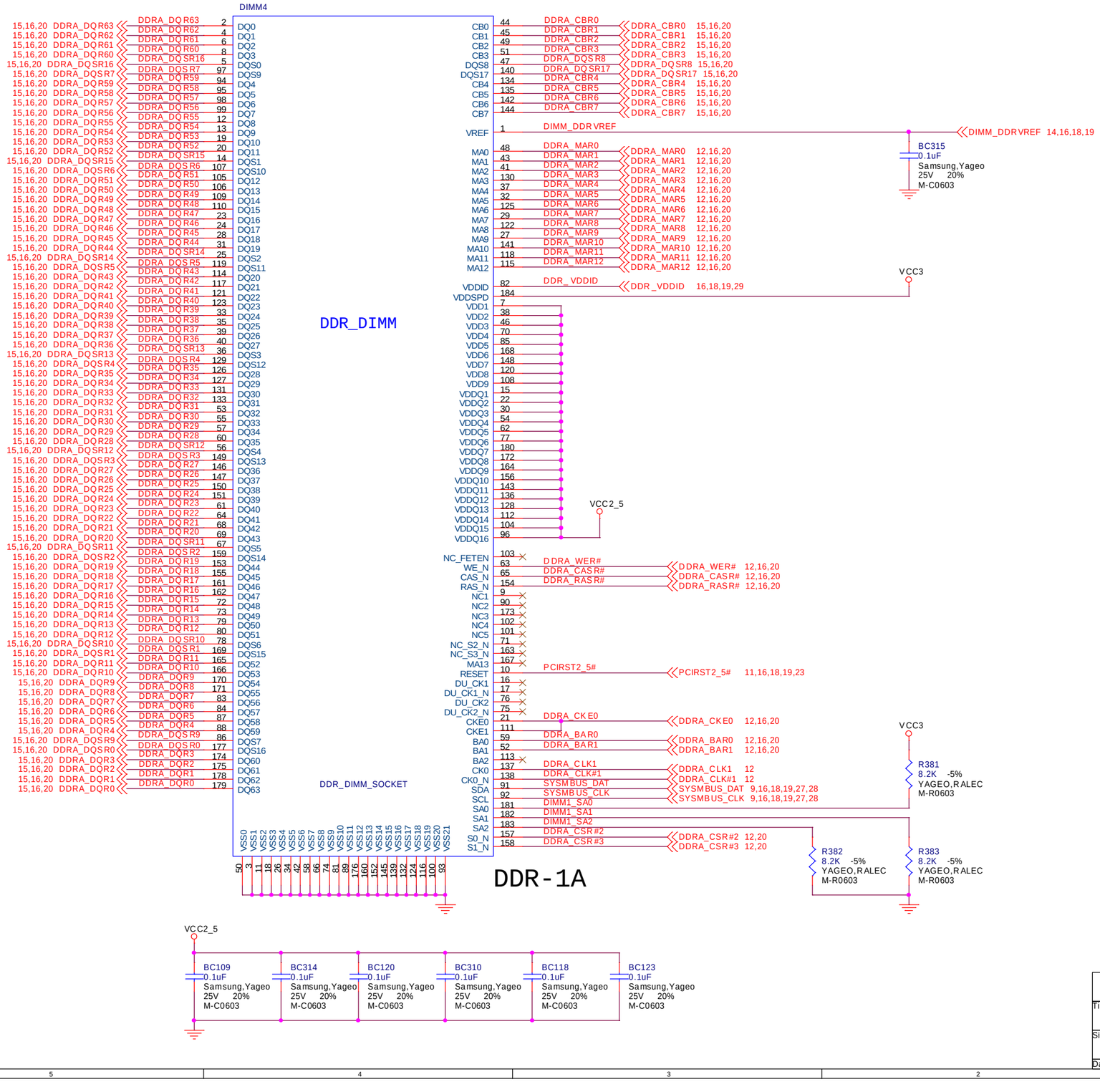
INTEL CORPORATION

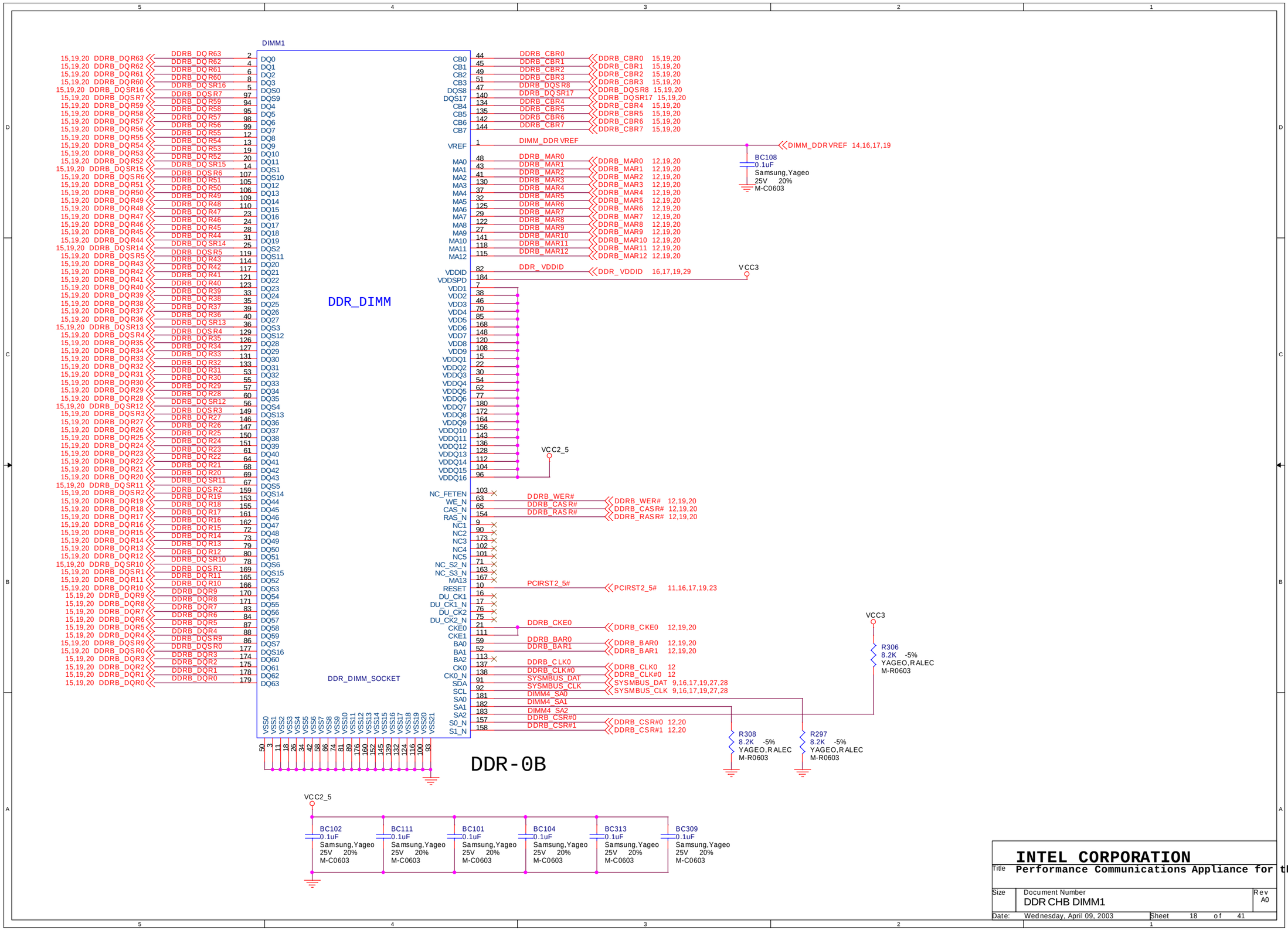
Title: Performance Communications Appliance for the Intel(R) Pen

Size | Document Number: DDR SERIES RESISTOR PACKS | Rev: A0

Date: Wednesday, April 09, 2003 | Sheet 15 of 41

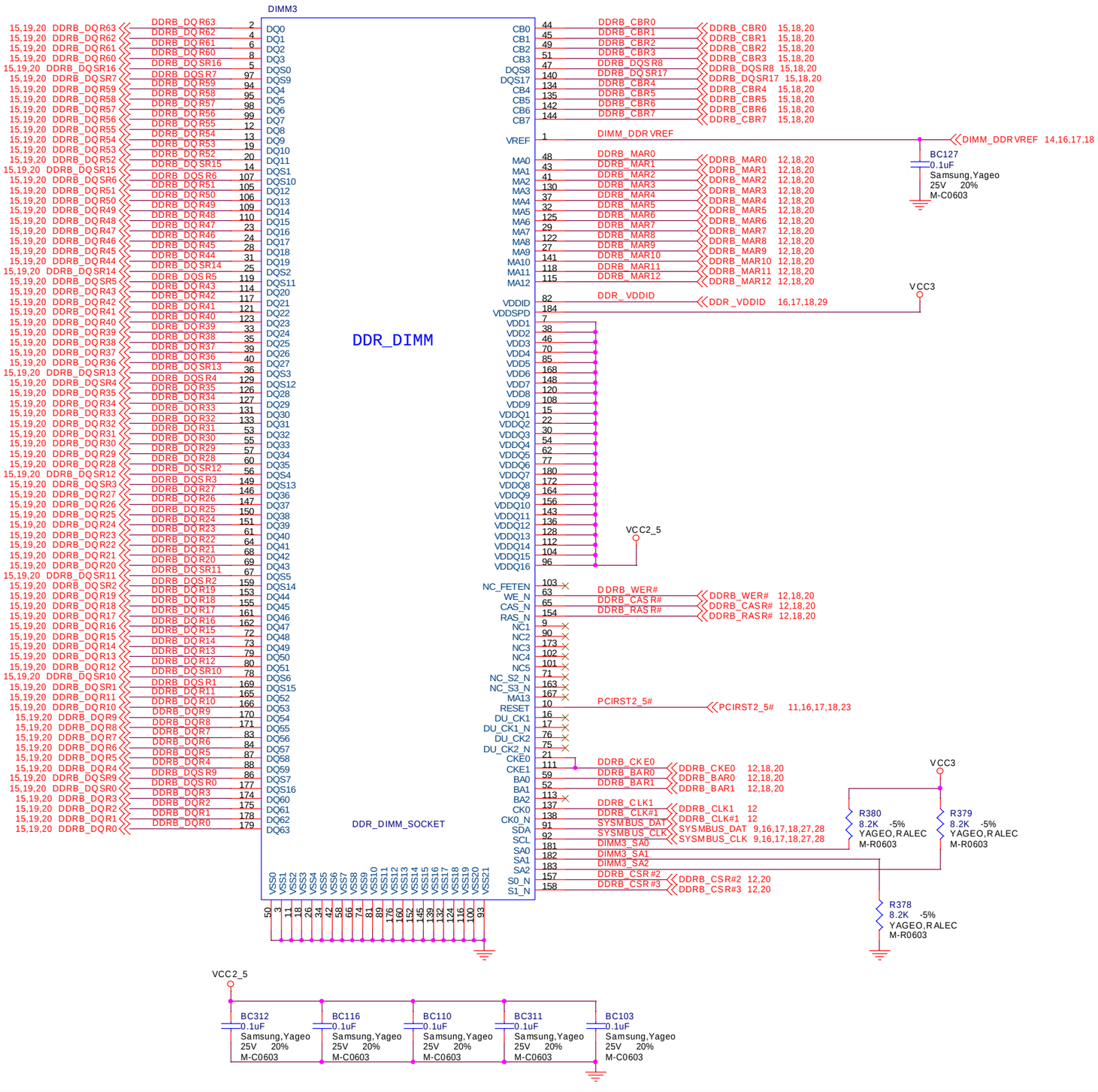

DIMM2
DDR_DIMM
DDR_DIMM_SOCKET
DDR-0A
DQ0 DQ1 DQ2 DQ3 DQS0 DQ4 DQ5 DQ6 DQ7 DQ8 DQ9 DQ10 DQ11 DQS1 DQS10 DQ12 DQ13 DQ14 DQ15 DQ16 DQ17 DQS2 DQS11 DQ20 DQ21 DQ22 DQ23 DQ24 DQ25 DQ26 DQ27 DQS3 DQS12 DQ28 DQ29 DQ30 DQ31 DQ32 DQ33 DQ34 DQ35 DQS4 DQS13 DQ36 DQ37 DQ38 DQ39 DQ40 DQ41 DQ42 DQ43 DQS5 DQS14 DQ44 DQ45 DQ46 DQ47 DQ48 DQ49 DQ50 DQ51 DQS6 DQS15 DQ52 DQ53 DQ54 DQ55 DQ56 DQ57 DQ58 DQ59 DQS7 DQS16 DQ60 DQ61 DQ62 DQ63
CB0 CB1 CB2 CB3 DQS8 DQS17 CB4 CB5 CB6 CB7
VREF
MA0 MA1 MA2 MA3 MA4 MA5 MA6 MA7 MA8 MA9 MA10 MA11 MA12
VDDID VDDSPD
VDD1 VDD2 VDD3 VDD4 VDD5 VDD6 VDD7 VDD8 VDD9
VDDQ1 VDDQ2 VDDQ3 VDDQ4 VDDQ5 VDDQ6 VDDQ7 VDDQ8 VDDQ9 VDDQ10 VDDQ11 VDDQ12 VDDQ13 VDDQ14 VDDQ15 VDDQ16
NC_FETEN
WE_N CAS_N RAS_N
NC1 NC2 NC3 NC4 NC5 NC_S2_N NC_S3_N MA13
RESET
DU_CK1 DU_CK1_N DU_CK2 DU_CK2_N
CKE0 CKE1
BA0 BA1 BA2
CK0 CK0_N
SDA SCL
SA0 SA1 SA2
S0_N S1_N
VSS0 VSS1 VSS2 VSS3 VSS4 VSS5 VSS6 VSS7 VSS8 VSS9 VSS10 VSS11 VSS12 VSS13 VSS14 VSS15 VSS16 VSS17 VSS18 VSS19 VSS20 VSS21
DDRA_DQR63 DDRA_DQR62 DDRA_DQR61 DDRA_DQR60 DDRA_DQSR16 DDRA_DQSR7 DDRA_DQR59 DDRA_DQR58 DDRA_DQR57 DDRA_DQR56 DDRA_DQR55 DDRA_DQR54 DDRA_DQR53 DDRA_DQR52 DDRA_DQSR15 DDRA_DQSR6 DDRA_DQR51 DDRA_DQR50 DDRA_DQR49 DDRA_DQR48 DDRA_DQR47 DDRA_DQR46 DDRA_DQR45 DDRA_DQR44 DDRA_DQSR14 DDRA_DQSR5 DDRA_DQR43 DDRA_DQR42 DDRA_DQR41 DDRA_DQR40 DDRA_DQR39 DDRA_DQR38 DDRA_DQR37 DDRA_DQR36 DDRA_DQSR13 DDRA_DQSR4 DDRA_DQR35 DDRA_DQR34 DDRA_DQR33 DDRA_DQR32 DDRA_DQR31 DDRA_DQR30 DDRA_DQR29 DDRA_DQR28 DDRA_DQSR12 DDRA_DQSR3 DDRA_DQR27 DDRA_DQR26 DDRA_DQR25 DDRA_DQR24 DDRA_DQR23 DDRA_DQR22 DDRA_DQR21 DDRA_DQR20 DDRA_DQSR11 DDRA_DQSR2 DDRA_DQR19 DDRA_DQR18 DDRA_DQR17 DDRA_DQR16 DDRA_DQR15 DDRA_DQR14 DDRA_DQR13 DDRA_DQR12 DDRA_DQSR10 DDRA_DQSR1 DDRA_DQR11 DDRA_DQR10 DDRA_DQR9 DDRA_DQR8 DDRA_DQR7 DDRA_DQR6 DDRA_DQR5 DDRA_DQR4 DDRA_DQSR9 DDRA_DQSR0 DDRA_DQR3 DDRA_DQR2 DDRA_DQR1 DDRA_DQR0
DDRA_CBR0 DDRA_CBR1 DDRA_CBR2 DDRA_CBR3 DDRA_DQSR8 DDRA_DQSR17 DDRA_CBR4 DDRA_CBR5 DDRA_CBR6 DDRA_CBR7
DIMM_DDRVREF
DDRA_MAR0 DDRA_MAR1 DDRA_MAR2 DDRA_MAR3 DDRA_MAR4 DDRA_MAR5 DDRA_MAR6 DDRA_MAR7 DDRA_MAR8 DDRA_MAR9 DDRA_MAR10 DDRA_MAR11 DDRA_MAR12
DDR_VDDID 17,18,19,29
VCC3
VCC2_5
DDRA_WER# 12,17,20
DDRA_CASR# 12,17,20
DDRA_RASR# 12,17,20
PCIRST2_5#
PCIRST2_5# 11,17,18,19,23
DDRA_CKE0
DDRA_CKE0 12,17,20
DDRA_BAR0 DDRA_BAR1
DDRA_CLK0 DDRA_CLK#0
DDRA_CLK0 12
DDRA_CLK#0 12
SYSMBUS_DAT SYSMBUS_CLK
SYSMBUS_DAT 9,17,18,19,27,28
SYSMBUS_CLK 9,17,18,19,27,28
DIMM2_SA0 DIMM2_SA1 DIMM2_SA2
DDRA_CSR#0 DDRA_CSR#1
DDRA_CSR#0 12,20
DDRA_CSR#1 12,20
BC114 0.1uF Samsung,Yageo 25V 20% M-C0603
R307 8.2K -5% YAGEO,RALEC M-R0603
R321 8.2K -5% YAGEO,RALEC M-R0603
R320 8.2K -5% YAGEO,RALEC M-R0603
BC105 BC115 BC117 BC119 BC121 BC122 0.1uF Samsung,Yageo 25V 20% M-C0603
INTEL CORPORATION
Title Performance Communications Appliance for the Intel(R) Pen
Size
Document Number DDR CHA DIMM1
Rev A0
Date: Wednesday, April 09, 2003
Sheet 16 of 41


DIMM4
DDR_DIMM
DDR_DIMM_SOCKET
DDR-1A
DDRA_DQR63 2 DQ0
DDRA_DQR62 4 DQ1
DDRA_DQR61 6 DQ2
DDRA_DQR60 8 DQ3
DDRA_DQSR16 5 DQS0
DDRA_DQSR7 97 DQS9
DDRA_DQR59 94 DQ4
DDRA_DQR58 95 DQ5
DDRA_DQR57 98 DQ6
DDRA_DQR56 99 DQ7
DDRA_DQR55 12 DQ8
DDRA_DQR54 13 DQ9
DDRA_DQR53 19 DQ10
DDRA_DQR52 20 DQ11
DDRA_DQSR15 14 DQS1
DDRA_DQSR6 107 DQS10
DDRA_DQR51 105 DQ12
DDRA_DQR50 106 DQ13
DDRA_DQR49 109 DQ14
DDRA_DQR48 110 DQ15
DDRA_DQR47 23 DQ16
DDRA_DQR46 24 DQ17
DDRA_DQR45 28 DQ18
DDRA_DQR44 31 DQ19
DDRA_DQSR14 25 DQS2
DDRA_DQSR5 119 DQS11
DDRA_DQR43 114 DQ20
DDRA_DQR42 117 DQ21
DDRA_DQR41 121 DQ22
DDRA_DQR40 123 DQ23
DDRA_DQR39 33 DQ24
DDRA_DQR38 35 DQ25
DDRA_DQR37 39 DQ26
DDRA_DQR36 40 DQ27
DDRA_DQSR13 36 DQS3
DDRA_DQSR4 129 DQS12
DDRA_DQR35 126 DQ28
DDRA_DQR34 127 DQ29
DDRA_DQR33 131 DQ30
DDRA_DQR32 133 DQ31
DDRA_DQR31 53 DQ32
DDRA_DQR30 55 DQ33
DDRA_DQR29 57 DQ34
DDRA_DQR28 60 DQ35
DDRA_DQSR12 56 DQS4
DDRA_DQSR3 149 DQS13
DDRA_DQR27 146 DQ36
DDRA_DQR26 147 DQ37
DDRA_DQR25 150 DQ38
DDRA_DQR24 151 DQ39
DDRA_DQR23 61 DQ40
DDRA_DQR22 64 DQ41
DDRA_DQR21 68 DQ42
DDRA_DQR20 69 DQ43
DDRA_DQSR11 67 DQS5
DDRA_DQSR2 159 DQS14
DDRA_DQR19 153 DQ44
DDRA_DQR18 155 DQ45
DDRA_DQR17 161 DQ46
DDRA_DQR16 162 DQ47
DDRA_DQR15 72 DQ48
DDRA_DQR14 73 DQ49
DDRA_DQR13 79 DQ50
DDRA_DQR12 80 DQ51
DDRA_DQSR10 78 DQS6
DDRA_DQSR1 169 DQS15
DDRA_DQR11 165 DQ52
DDRA_DQR10 166 DQ53
DDRA_DQR9 170 DQ54
DDRA_DQR8 171 DQ55
DDRA_DQR7 83 DQ56
DDRA_DQR6 84 DQ57
DDRA_DQR5 87 DQ58
DDRA_DQR4 88 DQ59
DDRA_DQSR9 86 DQS7
DDRA_DQSR0 177 DQS16
DDRA_DQR3 174 DQ60
DDRA_DQR2 175 DQ61
DDRA_DQR1 178 DQ62
DDRA_DQR0 179 DQ63
CB0 44 DDRA_CBR0
CB1 45 DDRA_CBR1
CB2 49 DDRA_CBR2
CB3 51 DDRA_CBR3
DQS8 47 DDRA_DQSR8
DQS17 140 DDRA_DQSR17
CB4 134 DDRA_CBR4
CB5 135 DDRA_CBR5
CB6 142 DDRA_CBR6
CB7 144 DDRA_CBR7
VREF 1 DIMM_DDRVREF
MA0 48 DDRA_MAR0
MA1 43 DDRA_MAR1
MA2 41 DDRA_MAR2
MA3 130 DDRA_MAR3
MA4 37 DDRA_MAR4
MA5 32 DDRA_MAR5
MA6 125 DDRA_MAR6
MA7 29 DDRA_MAR7
MA8 122 DDRA_MAR8
MA9 27 DDRA_MAR9
MA10 141 DDRA_MAR10
MA11 118 DDRA_MAR11
MA12 115 DDRA_MAR12
VDDID 82 DDR_VDDID
VDDSPD 184
VDD1 7
VDD2 38
VDD3 46
VDD4 70
VDD5 85
VDD6 168
VDD7 148
VDD8 120
VDD9 108
VDDQ1 15
VDDQ2 22
VDDQ3 30
VDDQ4 54
VDDQ5 62
VDDQ6 77
VDDQ7 180
VDDQ8 172
VDDQ9 164
VDDQ10 156
VDDQ11 143
VDDQ12 136
VDDQ13 128
VDDQ14 112
VDDQ15 104
VDDQ16 96
NC_FETEN 103
WE_N 63 DDRA_WER#
CAS_N 65 DDRA_CASR#
RAS_N 154 DDRA_RASR#
NC1 9
NC2 90
NC3 173
NC4 102
NC5 101
NC_S2_N 71
NC_S3_N 163
MA13 167
RESET 10 PCIRST2_5#
DU_CK1 16
DU_CK1_N 17
DU_CK2 76
DU_CK2_N 75
CKE0 21 DDRA_CKE0
CKE1 111
BA0 59 DDRA_BAR0
BA1 52 DDRA_BAR1
BA2 113
CK0 137 DDRA_CLK1
CK0_N 138 DDRA_CLK#1
SDA 91 SYSMBUS_DAT
SCL 92 SYSMBUS_CLK
SA0 181 DIMM1_SA0
SA1 182 DIMM1_SA1
SA2 183 DIMM1_SA2
S0_N 157 DDRA_CSR#2
S1_N 158 DDRA_CSR#3
VSS0 50
VSS1 3
VSS2 11
VSS3 18
VSS4 26
VSS5 34
VSS6 42
VSS7 58
VSS8 66
VSS9 74
VSS10 81
VSS11 89
VSS12 176
VSS13 160
VSS14 152
VSS15 145
VSS16 139
VSS17 132
VSS18 124
VSS19 116
VSS20 100
VSS21 93
DDRA_CBR0 DDRA_CBR0 15,16,20
DDRA_CBR1 DDRA_CBR1 15,16,20
DDRA_CBR2 DDRA_CBR2 15,16,20
DDRA_CBR3 DDRA_CBR3 15,16,20
DDRA_DQSR8 DDRA_DQSR8 15,16,20
DDRA_DQSR17 DDRA_DQSR17 15,16,20
DDRA_CBR4 DDRA_CBR4 15,16,20
DDRA_CBR5 DDRA_CBR5 15,16,20
DDRA_CBR6 DDRA_CBR6 15,16,20
DDRA_CBR7 DDRA_CBR7 15,16,20
DIMM_DDRVREF DIMM_DDRVREF 14,16,18,19
BC315 0.1uF Samsung,Yageo 25V 20% M-C0603
DDRA_MAR0 DDRA_MAR0 12,16,20
DDRA_MAR1 DDRA_MAR1 12,16,20
DDRA_MAR2 DDRA_MAR2 12,16,20
DDRA_MAR3 DDRA_MAR3 12,16,20
DDRA_MAR4 DDRA_MAR4 12,16,20
DDRA_MAR5 DDRA_MAR5 12,16,20
DDRA_MAR6 DDRA_MAR6 12,16,20
DDRA_MAR7 DDRA_MAR7 12,16,20
DDRA_MAR8 DDRA_MAR8 12,16,20
DDRA_MAR9 DDRA_MAR9 12,16,20
DDRA_MAR10 DDRA_MAR10 12,16,20
DDRA_MAR11 DDRA_MAR11 12,16,20
DDRA_MAR12 DDRA_MAR12 12,16,20
VCC3
DDR_VDDID DDR_VDDID 16,18,19,29
VCC2_5
DDRA_WER# DDRA_WER# 12,16,20
DDRA_CASR# DDRA_CASR# 12,16,20
DDRA_RASR# DDRA_RASR# 12,16,20
PCIRST2_5# PCIRST2_5# 11,16,18,19,23
DDRA_CKE0 DDRA_CKE0 12,16,20
DDRA_BAR0 DDRA_BAR0 12,16,20
DDRA_BAR1 DDRA_BAR1 12,16,20
DDRA_CLK1 DDRA_CLK1 12
DDRA_CLK#1 DDRA_CLK#1 12
SYSMBUS_DAT SYSMBUS_DAT 9,16,18,19,27,28
SYSMBUS_CLK SYSMBUS_CLK 9,16,18,19,27,28
DIMM1_SA0
DIMM1_SA1
DIMM1_SA2
DDRA_CSR#2 DDRA_CSR#2 12,20
DDRA_CSR#3 DDRA_CSR#3 12,20
R381 8.2K -5% YAGEO,RALEC M-R0603
R382 8.2K -5% YAGEO,RALEC M-R0603
R383 8.2K -5% YAGEO,RALEC M-R0603
VCC3
VCC2_5
BC109 0.1uF Samsung,Yageo 25V 20% M-C0603
BC314 0.1uF Samsung,Yageo 25V 20% M-C0603
BC120 0.1uF Samsung,Yageo 25V 20% M-C0603
BC310 0.1uF Samsung,Yageo 25V 20% M-C0603
BC118 0.1uF Samsung,Yageo 25V 20% M-C0603
BC123 0.1uF Samsung,Yageo 25V 20% M-C0603
INTEL CORPORATION
Title Performance Communications Appliance for the Intel(R) Pen
Size Document Number DDR CHA DIMM2 Rev A0
Date: Wednesday, April 09, 2003 Sheet 17 of 41



INTEL CORPORATION

Title	Performance Communications Appliance for the Intel(R) Pen	
Size	Document Number: DDR CHB DIMM1	Rev: A0
Date: Wednesday, April 09, 2003	Sheet 18 of 41	


DIMM3
DDR_DIMM
DDR_DIMM_SOCKET
DDRB_DQR63 2
DDRB_DQR62 4
DDRB_DQR61 6
DDRB_DQR60 8
DDRB_DQSR16 5
DDRB_DQSR7 97
DDRB_DQR59 94
DDRB_DQR58 95
DDRB_DQR57 98
DDRB_DQR56 99
DDRB_DQR55 12
DDRB_DQR54 13
DDRB_DQR53 19
DDRB_DQR52 20
DDRB_DQSR15 14
DDRB_DQSR6 107
DDRB_DQR51 105
DDRB_DQR50 106
DDRB_DQR49 109
DDRB_DQR48 110
DDRB_DQR47 23
DDRB_DQR46 24
DDRB_DQR45 28
DDRB_DQR44 31
DDRB_DQSR14 25
DDRB_DQSR5 119
DDRB_DQR43 114
DDRB_DQR42 117
DDRB_DQR41 121
DDRB_DQR40 123
DDRB_DQR39 33
DDRB_DQR38 35
DDRB_DQR37 39
DDRB_DQR36 40
DDRB_DQSR13 36
DDRB_DQSR4 129
DDRB_DQR35 126
DDRB_DQR34 127
DDRB_DQR33 131
DDRB_DQR32 133
DDRB_DQR31 53
DDRB_DQR30 55
DDRB_DQR29 57
DDRB_DQR28 60
DDRB_DQSR12 56
DDRB_DQSR3 149
DDRB_DQR27 146
DDRB_DQR26 147
DDRB_DQR25 150
DDRB_DQR24 151
DDRB_DQR23 61
DDRB_DQR22 64
DDRB_DQR21 68
DDRB_DQR20 69
DDRB_DQSR11 67
DDRB_DQSR2 159
DDRB_DQR19 153
DDRB_DQR18 155
DDRB_DQR17 161
DDRB_DQR16 162
DDRB_DQR15 72
DDRB_DQR14 73
DDRB_DQR13 79
DDRB_DQR12 80
DDRB_DQSR10 78
DDRB_DQSR1 169
DDRB_DQR11 165
DDRB_DQR10 166
DDRB_DQR9 170
DDRB_DQR8 171
DDRB_DQR7 83
DDRB_DQR6 84
DDRB_DQR5 87
DDRB_DQR4 88
DDRB_DQSR9 86
DDRB_DQSR0 177
DDRB_DQR3 174
DDRB_DQR2 175
DDRB_DQR1 178
DDRB_DQR0 179
DQ0 DQ1 DQ2 DQ3 DQS0 DQS9 DQ4 DQ5 DQ6 DQ7 DQ8 DQ9 DQ10 DQ11 DQS1 DQS10 DQ12 DQ13 DQ14 DQ15 DQ16 DQ17 DQ18 DQ19 DQS2 DQS11 DQ20 DQ21 DQ22 DQ23 DQ24 DQ25 DQ26 DQ27 DQS3 DQS12 DQ28 DQ29 DQ30 DQ31 DQ32 DQ33 DQ34 DQ35 DQS4 DQS13 DQ36 DQ37 DQ38 DQ39 DQ40 DQ41 DQ42 DQ43 DQS5 DQS14 DQ44 DQ45 DQ46 DQ47 DQ48 DQ49 DQ50 DQ51 DQS6 DQS15 DQ52 DQ53 DQ54 DQ55 DQ56 DQ57 DQ58 DQ59 DQS7 DQS16 DQ60 DQ61 DQ62 DQ63
VSS0 VSS1 VSS2 VSS3 VSS4 VSS5 VSS6 VSS7 VSS8 VSS9 VSS10 VSS11 VSS12 VSS13 VSS14 VSS15 VSS16 VSS17 VSS18 VSS19 VSS20 VSS21
50 3 11 18 26 34 42 58 66 74 81 89 176 160 152 145 139 132 124 116 100 93
CB0 CB1 CB2 CB3 DQS8 DQS17 CB4 CB5 CB6 CB7
44 45 49 51 47 140 134 135 142 144
DDRB_CBR0 DDRB_CBR1 DDRB_CBR2 DDRB_CBR3 DDRB_DQSR8 DDRB_DQSR17 DDRB_CBR4 DDRB_CBR5 DDRB_CBR6 DDRB_CBR7
DDRB_CBR0 15,18,20
DDRB_CBR1 15,18,20
DDRB_CBR2 15,18,20
DDRB_CBR3 15,18,20
DDRB_DQSR8 15,18,20
DDRB_DQSR17 15,18,20
DDRB_CBR4 15,18,20
DDRB_CBR5 15,18,20
DDRB_CBR6 15,18,20
DDRB_CBR7 15,18,20
VREF
1
DIMM_DDR VREF
DIMM_DDR VREF 14,16,17,18
BC127
0.1uF
Samsung,Yageo
25V 20%
M-C0603
MA0 MA1 MA2 MA3 MA4 MA5 MA6 MA7 MA8 MA9 MA10 MA11 MA12
48 43 41 130 37 32 125 29 122 27 141 118 115
DDRB_MAR0 DDRB_MAR1 DDRB_MAR2 DDRB_MAR3 DDRB_MAR4 DDRB_MAR5 DDRB_MAR6 DDRB_MAR7 DDRB_MAR8 DDRB_MAR9 DDRB_MAR10 DDRB_MAR11 DDRB_MAR12
DDRB_MAR0 12,18,20
DDRB_MAR1 12,18,20
DDRB_MAR2 12,18,20
DDRB_MAR3 12,18,20
DDRB_MAR4 12,18,20
DDRB_MAR5 12,18,20
DDRB_MAR6 12,18,20
DDRB_MAR7 12,18,20
DDRB_MAR8 12,18,20
DDRB_MAR9 12,18,20
DDRB_MAR10 12,18,20
DDRB_MAR11 12,18,20
DDRB_MAR12 12,18,20
VCC3
VDDID VDDSPD
82 184
DDR_VDDID
DDR_VDDID 16,17,18,29
VDD1 VDD2 VDD3 VDD4 VDD5 VDD6 VDD7 VDD8 VDD9
38 46 70 85 168 148 120 108 15
VDDQ1 VDDQ2 VDDQ3 VDDQ4 VDDQ5 VDDQ6 VDDQ7 VDDQ8 VDDQ9 VDDQ10 VDDQ11 VDDQ12 VDDQ13 VDDQ14 VDDQ15 VDDQ16
22 30 54 62 77 180 172 164 156 143 136 128 112 104 96
VCC2_5
NC_FETEN WE_N CAS_N RAS_N NC1 NC2 NC3 NC4 NC5 NC_S2_N NC_S3_N MA13 RESET DU_CK1 DU_CK1_N DU_CK2 DU_CK2_N CKE0 CKE1 BA0 BA1 BA2 CK0 CK0_N SDA SCL SA0 SA1 SA2 S0_N S1_N
103 63 65 154 9 90 173 102 101 71 163 167 10 16 17 76 75 21 111 59 52 113 137 138 91 92 181 182 183 157 158
DDRB_WER# DDRB_CASR# DDRB_RASR#
DDRB_WER# 12,18,20
DDRB_CASR# 12,18,20
DDRB_RASR# 12,18,20
PCIRST2_5#
PCIRST2_5# 11,16,17,18,23
DDRB_CKE0 DDRB_BAR0 DDRB_BAR1 DDRB_CLK1 DDRB_CLK#1 SYSMBUS_DAT SYSMBUS_CLK DIMM3_SA0 DIMM3_SA1 DIMM3_SA2 DDRB_CSR#2 DDRB_CSR#3
DDRB_CKE0 12,18,20
DDRB_BAR0 12,18,20
DDRB_BAR1 12,18,20
DDRB_CLK1 12
DDRB_CLK#1 12
SYSMBUS_DAT 9,16,17,18,27,28
SYSMBUS_CLK 9,16,17,18,27,28
DDRB_CSR#2 12,20
DDRB_CSR#3 12,20
VCC3
R380 8.2K -5% YAGEO,RALEC M-R0603
R379 8.2K -5% YAGEO,RALEC M-R0603
R378 8.2K -5% YAGEO,RALEC M-R0603
VCC2_5
BC312 0.1uF Samsung,Yageo 25V 20% M-C0603
BC116 0.1uF Samsung,Yageo 25V 20% M-C0603
BC110 0.1uF Samsung,Yageo 25V 20% M-C0603
BC311 0.1uF Samsung,Yageo 25V 20% M-C0603
BC103 0.1uF Samsung,Yageo 25V 20% M-C0603
INTEL CORPORATION
Title Performance Communications Appliance for the Intel(R) Pen
Size
Document Number
DDR CHB DIMM2
Rev A0
Date: Wednesday, April 09, 2003
Sheet 19 of 41

VTT_DDR

RN139
15,16,17 DDRA_DQR6
15,16,17 DDRA_DQSR9
15,16,17 DDRA_DQR1
15,16,17 DDRA_DQSR0
8P4R-39
Yageo,Ralec

RN140
15,16,17 DDRA_DQR0
15,16,17 DDRA_DQR5
15,16,17 DDRA_DQR4
8P4R-39
Yageo,Ralec

RN135
15,16,17 DDRA_DQR17
15,16,17 DDRA_DQR20
15,16,17 DDRA_DQR16
15,16,17 DDRA_DQR15
8P4R-39
Yageo,Ralec

RN136
15,16,17 DDRA_DQR11
15,16,17 DDRA_DQR14
15,16,17 DDRA_DQR10
15,16,17 DDRA_DQSR10
8P4R-39
Yageo,Ralec

RN132
15,16,17 DDRA_DQR23
15,16,17 DDRA_DQR19
12,16,17 DDRA_RAS#
12,16,17 DDRA_WER#
8P4R-39
Yageo,Ralec

RN130
15,16,17 DDRA_DQR30
15,16,17 DDRA_DQSR3
15,16,17 DDRA_DQSR12
15,16,17 DDRA_DQR29
8P4R-39
Yageo,Ralec

RN129
15,16,17 DDRA_CBR7
15,16,17 DDRA_DQR27
15,16,17 DDRA_DQR31
15,16,17 DDRA_DQR26
8P4R-39
Yageo,Ralec

RN124
12,16,17 DDRA_MAR4
12,16,17 DDRA_MAR3
15,16,17 DDRA_DQR33
15,16,17 DDRA_DQR37
8P4R-39
Yageo,Ralec

RN123
15,16,17 DDRA_DQR34
15,16,17 DDRA_DQR38
15,16,17 DDRA_DQSR4
15,16,17 DDRA_DQSR13
8P4R-39
Yageo,Ralec

RN122
12,16,17 DDRA_MAR5
12,16,17 DDRA_MAR6
15,16,17 DDRA_DQR39
15,16,17 DDRA_DQR35
8P4R-39
Yageo,Ralec

RN118
15,16,17 DDRA_DQR52
15,16,17 DDRA_DQR43
12,16,17 DDRA_MAR12
15,16,17 DDRA_DQR47
8P4R-39
Yageo,Ralec

VTT_DDR

RN114
15,16,17 DDRA_DQSR16
15,16,17 DDRA_DQSR7
15,16,17 DDRA_DQR61
15,16,17 DDRA_DQR57
8P4R-39
Yageo,Ralec

RN138
15,16,17 DDRA_DQR12
15,16,17 DDRA_DQR3
15,16,17 DDRA_DQR2
15,16,17 DDRA_DQR7
8P4R-39
Yageo,Ralec

RN115
15,16,17 DDRA_DQR56
15,16,17 DDRA_DQR60
15,16,17 DDRA_DQR51
15,16,17 DDRA_DQR55
8P4R-39
Yageo,Ralec

RN133
15,16,17 DDRA_DQR18
15,16,17 DDRA_DQR22
12,16,17 DDRA_CASR#
12,17 DDRA_CSR#2
8P4R-39
Yageo,Ralec

RN117
15,16,17 DDRA_DQR49
15,16,17 DDRA_DQR48
12,16,17 DDRA_CKE0
15,16,17 DDRA_DQR53
8P4R-39
Yageo,Ralec

RN128
15,16,17 DDRA_CBR2
15,16,17 DDRA_CBR6
15,16,17 DDRA_CBR3
12,16,17 DDRA_BAR1
8P4R-39
Yageo,Ralec

RN127
15,16,17 DDRA_DQSR8
15,16,17 DDRA_DQSR17
12,16,17 DDRA_MAR0
12,16,17 DDRA_MAR10
8P4R-39
Yageo,Ralec

RN125
15,16,17 DDRA_DQR36
15,16,17 DDRA_DQR32
12,16,17 DDRA_MAR2
15,16,17 DDRA_CBR4
8P4R-39
Yageo,Ralec

RN120
15,16,17 DDRA_DQSR14
12,16,17 DDRA_MAR9
15,16,17 DDRA_DQR45
15,16,17 DDRA_DQR41
8P4R-39
Yageo,Ralec

RN131
15,16,17 DDRA_DQR25
12,16,17 DDRA_BAR0
15,16,17 DDRA_DQR24
15,16,17 DDRA_DQR28
8P4R-39
Yageo,Ralec

RN116
15,16,17 DDRA_DQR54
15,16,17 DDRA_DQR50
15,16,17 DDRA_DQSR6
15,16,17 DDRA_DQSR15
8P4R-39
Yageo,Ralec

RN137
15,16,17 DDRA_DQR9
15,16,17 DDRA_DQR8
15,16,17 DDRA_DQSR1
15,16,17 DDRA_DQR13
8P4R-39
Yageo,Ralec

VTT_DDR

RN110
15,18,19 DDRB_DQR6
15,18,19 DDRB_DQSR9
15,18,19 DDRB_DQR1
15,18,19 DDRB_DQSR0
8P4R-39
Yageo,Ralec

RN111
15,18,19 DDRB_DQR0
15,18,19 DDRB_DQR5
15,18,19 DDRB_DQR4
8P4R-39
Yageo,Ralec

RN107
15,18,19 DDRB_DQR11
15,18,19 DDRB_DQR14
15,18,19 DDRB_DQR10
15,18,19 DDRB_DQSR10
8P4R-39
Yageo,Ralec

RN108
15,18,19 DDRB_DQR9
15,18,19 DDRB_DQR8
15,18,19 DDRB_DQSR1
15,18,19 DDRB_DQR13
8P4R-39
Yageo,Ralec

RN104
12,18,19 DDRB_WER#
15,18,19 DDRB_DQR22
12,19 DDRB_CSR#2
12,18,19 DDRB_CASR#
8P4R-39
Yageo,Ralec

RN102
15,18,19 DDRB_DQR25
15,18,19 DDRB_DQR24
12,18,19 DDRB_BAR0
15,18,19 DDRB_DQR28
8P4R-39
Yageo,Ralec

RN101
15,18,19 DDRB_DQR30
15,18,19 DDRB_DQSR3
15,18,19 DDRB_DQSR12
15,18,19 DDRB_DQR29
8P4R-39
Yageo,Ralec

RN99
15,18,19 DDRB_CBR2
15,18,19 DDRB_CBR6
15,18,19 DDRB_CBR3
12,18,19 DDRB_BAR1
8P4R-39
Yageo,Ralec

RN94
15,18,19 DDRB_DQR34
15,18,19 DDRB_DQR38
15,18,19 DDRB_DQSR4
15,18,19 DDRB_DQSR13
8P4R-39
Yageo,Ralec

RN93
12,18,19 DDRB_MAR5
12,18,19 DDRB_MAR6
15,18,19 DDRB_DQR39
15,18,19 DDRB_DQR35
8P4R-39
Yageo,Ralec

RN119
15,16,17 DDRA_DQR46
15,16,17 DDRA_DQR42
15,16,17 DDRA_DQSR5
12,16,17 DDRA_MAR11
8P4R-39
Yageo,Ralec

RN121
12,16,17 DDRA_MAR7
12,16,17 DDRA_MAR8
15,16,17 DDRA_DQR40
15,16,17 DDRA_DQR44
8P4R-39
Yageo,Ralec

VTT_DDR

RN85
15,18,19 DDRB_DQSR16
15,18,19 DDRB_DQSR7
15,18,19 DDRB_DQR61
15,18,19 DDRB_DQR57
8P4R-39
Yageo,Ralec

RN109
15,18,19 DDRB_DQR12
15,18,19 DDRB_DQR3
15,18,19 DDRB_DQR2
15,18,19 DDRB_DQR7
8P4R-39
Yageo,Ralec

RN86
15,18,19 DDRB_DQR56
15,18,19 DDRB_DQR60
15,18,19 DDRB_DQR51
15,18,19 DDRB_DQR55
8P4R-39
Yageo,Ralec

RN105
12,19 DDRB_CSR#3
15,18,19 DDRB_DQSR11
15,18,19 DDRB_DQSR2
15,18,19 DDRB_DQR21
8P4R-39
Yageo,Ralec

RN89
15,18,19 DDRB_DQR52
15,18,19 DDRB_DQR43
12,18,19 DDRB_MAR12
15,18,19 DDRB_DQR47
8P4R-39
Yageo,Ralec

RN98
15,18,19 DDRB_DQSR8
15,18,19 DDRB_DQSR17
12,18,19 DDRB_MAR0
12,18,19 DDRB_MAR10
8P4R-39
Yageo,Ralec

RN97
15,18,19 DDRB_CBR5
12,18,19 DDRB_MAR1
15,18,19 DDRB_CBR0
15,18,19 DDRB_CBR1
8P4R-39
Yageo,Ralec

RN95
12,18,19 DDRB_MAR4
12,18,19 DDRB_MAR3
15,18,19 DDRB_DQR33
15,18,19 DDRB_DQR37
8P4R-39
Yageo,Ralec

RN100
15,18,19 DDRB_CBR7
15,18,19 DDRB_DQR27
15,18,19 DDRB_DQR31
15,18,19 DDRB_DQR26
8P4R-39
Yageo,Ralec

RN103
15,18,19 DDRB_DQR19
15,18,19 DDRB_DQR23
12,18,19 DDRB_RASR#
15,18,19 DDRB_DQR18
8P4R-39
Yageo,Ralec

RN113
15,16,17 DDRA_DQR59
15,16,17 DDRA_DQR63
15,16,17 DDRA_DQR58
15,16,17 DDRA_DQR62
8P4R-39
Yageo,Ralec

RN134
12,17 DDRA_CSR#3
15,16,17 DDRA_DQSR2
15,16,17 DDRA_DQSR11
15,16,17 DDRA_DQR21
8P4R-39
Yageo,Ralec

VTT_DDR

RN92
12,18,19 DDRB_MAR7
12,18,19 DDRB_MAR8
15,18,19 DDRB_DQR40
15,18,19 DDRB_DQR44
8P4R-39
Yageo,Ralec

RN90
15,18,19 DDRB_DQR46
15,18,19 DDRB_DQR42
15,18,19 DDRB_DQSR5
12,18,19 DDRB_MAR11
8P4R-39
Yageo,Ralec

RN88
15,18,19 DDRB_DQR49
15,18,19 DDRB_DQR48
15,18,19 DDRB_DQR53
12,18,19 DDRB_CKE0
8P4R-39
Yageo,Ralec

RN87
15,18,19 DDRB_DQR54
15,18,19 DDRB_DQR50
15,18,19 DDRB_DQSR6
15,18,19 DDRB_DQSR15
8P4R-39
Yageo,Ralec

RN84
15,18,19 DDRB_DQR59
15,18,19 DDRB_DQR63
15,18,19 DDRB_DQR58
15,18,19 DDRB_DQR62
8P4R-39
Yageo,Ralec

RN106
15,18,19 DDRB_DQR17
15,18,19 DDRB_DQR20
15,18,19 DDRB_DQR16
15,18,19 DDRB_DQR15
8P4R-39
Yageo,Ralec

RN91
15,18,19 DDRB_DQSR14
12,18,19 DDRB_MAR9
15,18,19 DDRB_DQR45
15,18,19 DDRB_DQR41
8P4R-39
Yageo,Ralec

RN126
15,16,17 DDRA_CBR5
12,16,17 DDRA_MAR1
15,16,17 DDRA_CBR0
15,16,17 DDRA_CBR1
8P4R-39
Yageo,Ralec

RN96
15,18,19 DDRB_DQR36
15,18,19 DDRB_DQR32
12,18,19 DDRB_MAR2
15,18,19 DDRB_CBR4
8P4R-39
Yageo,Ralec

VTT_DDR

R318
12,16 DDRA_CSR#0
39 -5%
YAGEO,RALEC
M-R0603

R319
12,16 DDRA_CSR#1
39 -5%
YAGEO,RALEC
M-R0603

R304
12,18 DDRB_CSR#0
39 -5%
YAGEO,RALEC
M-R0603

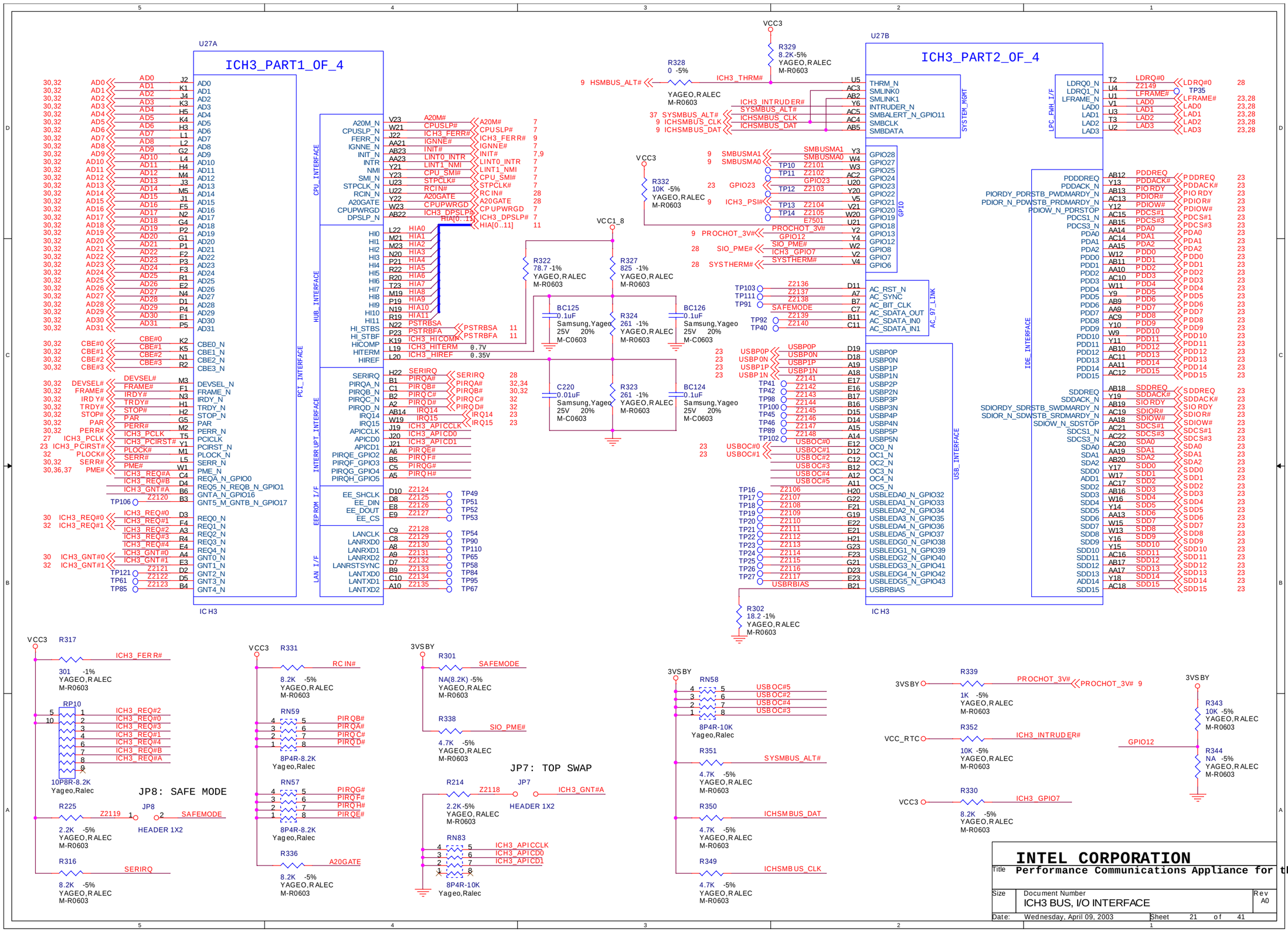
R305
12,18 DDRB_CSR#1
39 -5%
YAGEO,RALEC
M-R0603

INTEL CORPORATION

Title: **Performance Communications Appliance for the Intel(R) Pen**

Size	Document Number	Rev
	DDR TERMINATION RESISTORS	A0

Date: Wednesday, April 09, 2003 Sheet 20 of 41


U27A
ICH3_PART1_OF_4
U27B
ICH3_PART2_OF_4
VCC3
VCC1_8
R329 8.2K -5% YAGEO,RALEC M-R0603
R328 0 -5% YAGEO,RALEC M-R0603
R332 10K -5% YAGEO,RALEC M-R0603
R322 78.7 -1% YAGEO,RALEC M-R0603
R327 825 -1% YAGEO,RALEC M-R0603
R324 261 -1% YAGEO,RALEC M-R0603
R323 261 -1% YAGEO,RALEC M-R0603
BC125 0.1uF Samsung,Yageo 25V 20% M-C0603
BC126 0.1uF Samsung,Yageo 25V 20% M-C0603
BC124 0.1uF Samsung,Yageo 25V 20% M-C0603
C220 0.01uF Samsung,Yageo 25V 20% M-C0603
R302 18.2 -1% YAGEO,RALEC M-R0603
CPU_INTERFACE
HUB_INTERFACE
PCI_INTERFACE
INTERRUPT INTERFACE
EEPROM I/F
LAN I/F
SYSTEM_MGMT
GPIO
AC_97_LINK
IDE_INTERFACE
USB_INTERFACE
LPC_PWR I/F
IC H3
JP8: SAFE MODE
JP7: TOP SWAP
R225 2.2K -5% YAGEO,RALEC M-R0603
R316 8.2K -5% YAGEO,RALEC M-R0603
R317 301 -1% YAGEO,RALEC M-R0603
RP10 10P8R-8.2K Yageo,Ralec
R331 8.2K -5% YAGEO,RALEC M-R0603
RN59 8P4R-8.2K Yageo,Ralec
RN57 8P4R-8.2K Yageo,Ralec
R336 8.2K -5% YAGEO,RALEC M-R0603
R301 NA(8.2K) -5% YAGEO,RALEC M-R0603
R338 4.7K -5% YAGEO,RALEC M-R0603
R214 2.2K -5% YAGEO,RALEC M-R0603
RN83 8P4R-10K Yageo,Ralec
RN58 8P4R-10K Yageo,Ralec
R351 4.7K -5% YAGEO,RALEC M-R0603
R350 4.7K -5% YAGEO,RALEC M-R0603
R349 4.7K -5% YAGEO,RALEC M-R0603
R339 1K -5% YAGEO,RALEC M-R0603
R352 10K -5% YAGEO,RALEC M-R0603
R330 8.2K -5% YAGEO,RALEC M-R0603
R343 10K -5% YAGEO,RALEC M-R0603
R344 NA -5% YAGEO,RALEC M-R0603
INTEL CORPORATION
Title Performance Communications Appliance for the Intel(R) Pen
Size Document Number ICH3 BUS, I/O INTERFACE Rev A0
Date: Wednesday, April 09, 2003 Sheet 21 of 41

JP9: CMOS CLEAR
1-2: NORMAL
2-3: CLEAR

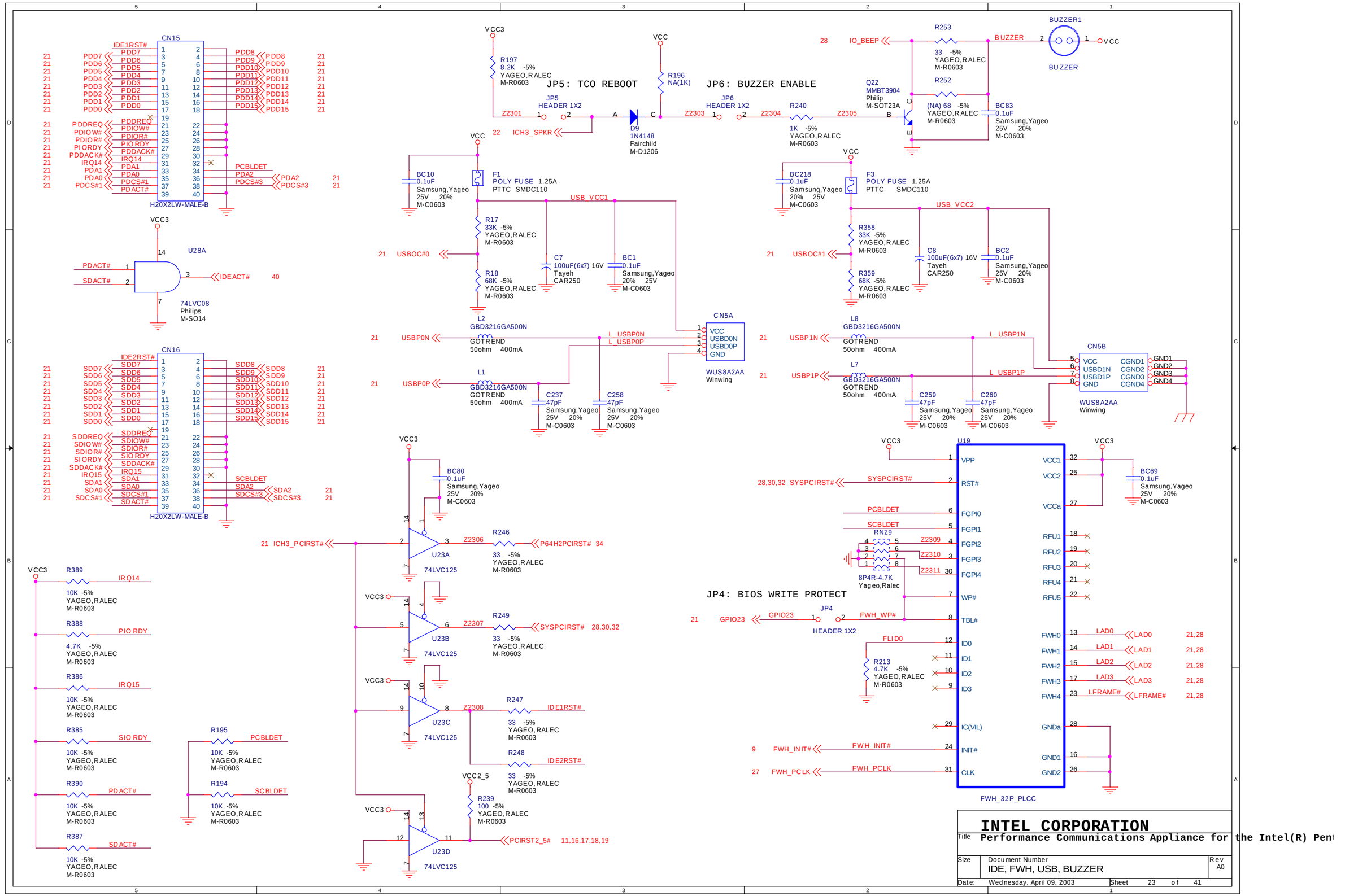
U27C
ICH3_PART3_OF_4

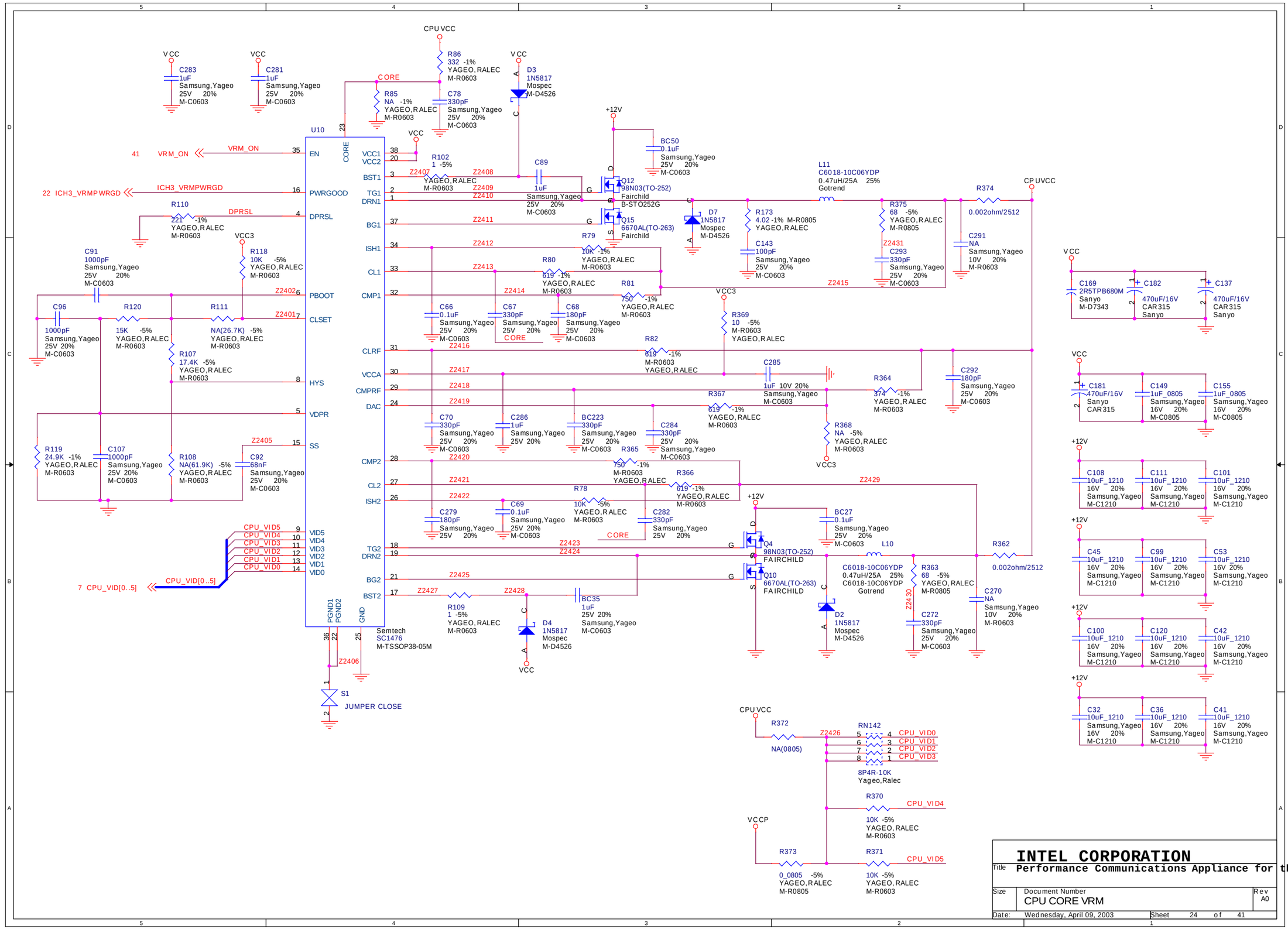
U27D
ICH3_PART4_OF4

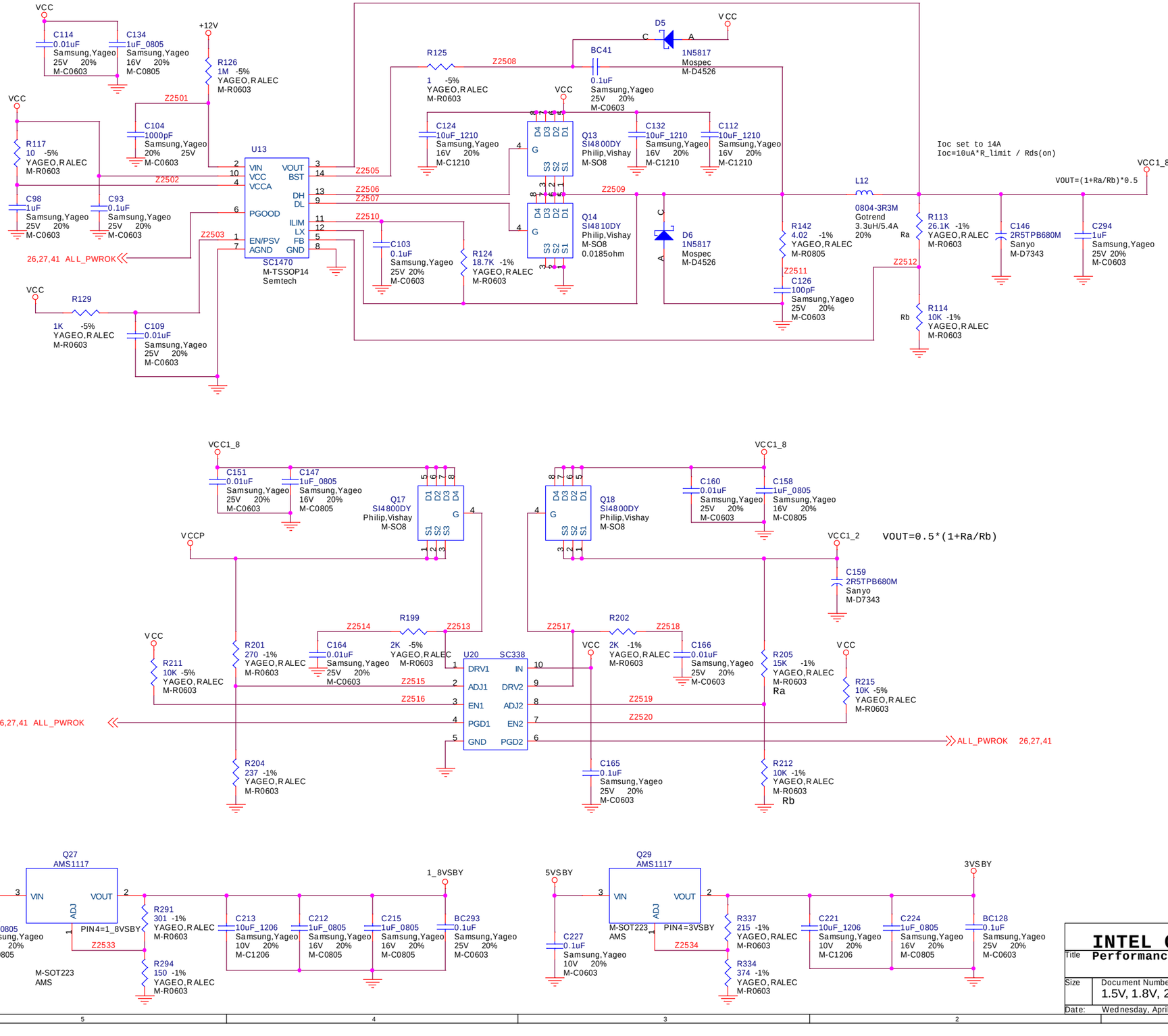
BAT54C

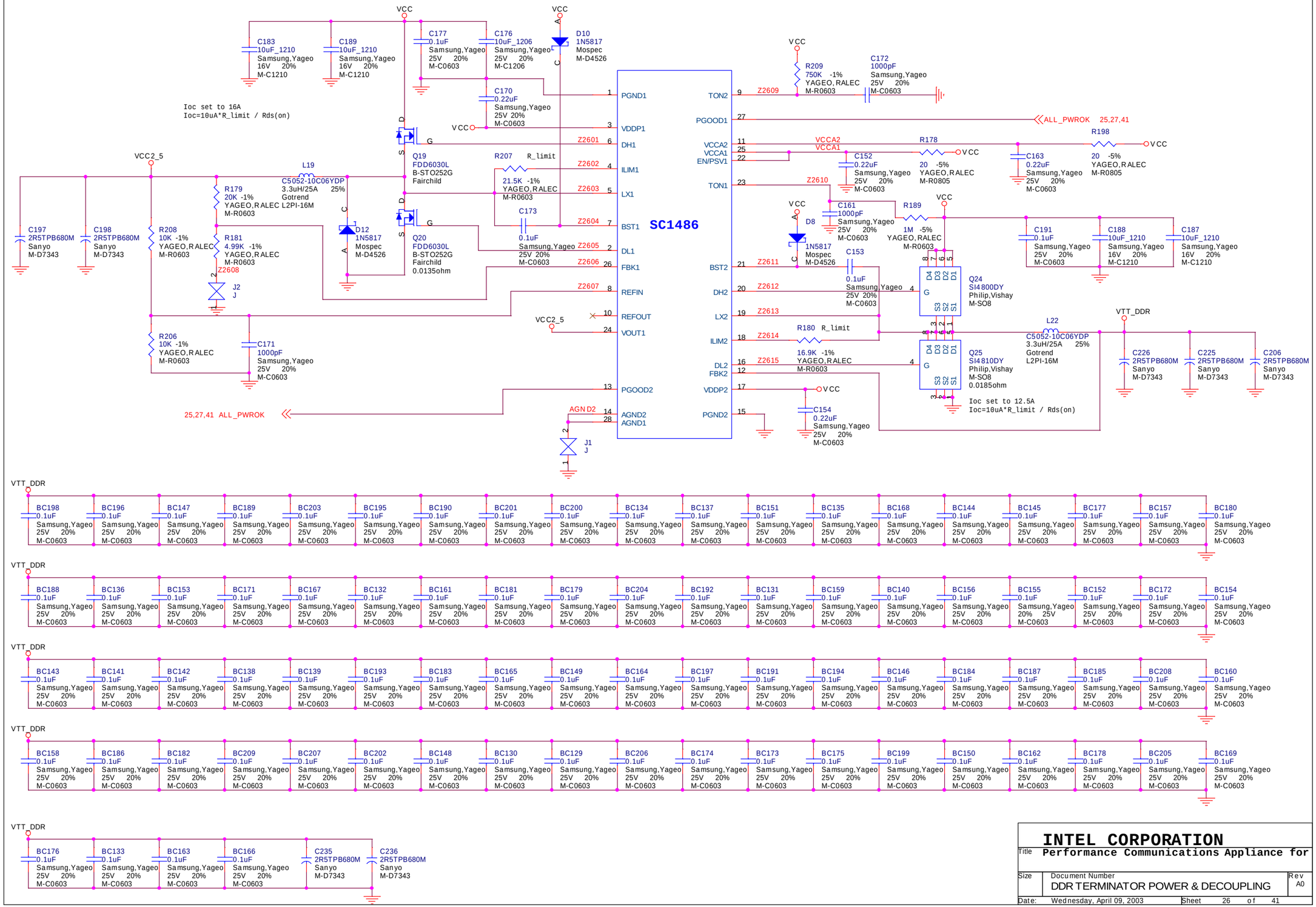
INTEL CORPORATION

Title	Performance Communications Appliance for the Intel(R) Pen	
Size	Document Number: ICH3 MISC, POWER, GND	Rev A0
Date: Wednesday, April 09, 2003	Sheet 22 of 41	


CN15
IDE1RST#
PDD7
PDD6
PDD5
PDD4
PDD3
PDD2
PDD1
PDD0
PDDREQ
PDIOW#
PDIOR#
PIORDY
PDDACK#
IRQ14
PDA1
PDA0
PDCS#1
PDACT#
PCBLDET
PDA2
PDCS#3
H20X2LW-MALE-B
VCC3
U28A
PDACT#
SDACT#
IDEACT#
74LVC08
Philips
M-SO14
CN16
IDE2RST#
SDD7
SDD6
SDD5
SDD4
SDD3
SDD2
SDD1
SDD0
SDDREQ
SDIOW#
SDIOR#
SIORDY
SDDACK#
IRQ15
SDA1
SDA0
SDCS#1
SDACT#
SCBLDET
SDA2
SDCS#3
H20X2LW-MALE-B
VCC3
R197
8.2K -5%
YAGEO,RALEC
M-R0603
JP5: TCO REBOOT
JP5
HEADER 1X2
Z2301
ICH3_SPKR
VCC
R196
NA(1K)
D9
1N4148
Fairchild
M-D1206
JP6: BUZZER ENABLE
JP6
HEADER 1X2
Z2303
Z2304
R240
1K -5%
YAGEO,RALEC
M-R0603
Z2305
Q22
MMBT3904
Philip
M-SOT23A
IO_BEEP
R253
33 -5%
YAGEO,RALEC
M-R0603
BUZZER
R252
(NA) 68 -5%
YAGEO,RALEC
M-R0603
BC83
0.1uF
Samsung,Yageo
25V 20%
M-C0603
BUZZER1
VCC
BC10
0.1uF
Samsung,Yageo
25V 20%
M-C0603
F1
POLY FUSE 1.25A
PTTC SMDC110
USB_VCC1
R17
33K -5%
YAGEO,RALEC
M-R0603
USBOC#0
C7
100uF(6x7) 16V
Tayeh
CAR250
BC1
0.1uF
Samsung,Yageo
20% 25V
M-C0603
R18
68K -5%
YAGEO,RALEC
M-R0603
L2
GBD3216GA500N
GOTREND
50ohm 400mA
USBP0N
L_USBP0N
L_USBP0P
L1
GBD3216GA500N
GOTREND
50ohm 400mA
USBP0P
C237
47pF
Samsung,Yageo
25V 20%
M-C0603
C258
47pF
Samsung,Yageo
25V 20%
M-C0603
CN5A
VCC
USBD0N
USBD0P
GND
WUS8A2AA
Winwing
BC218
0.1uF
Samsung,Yageo
20% 25V
M-C0603
F3
POLY FUSE 1.25A
PTTC SMDC110
USB_VCC2
R358
33K -5%
YAGEO,RALEC
M-R0603
USBOC#1
C8
100uF(6x7) 16V
Tayeh
CAR250
BC2
0.1uF
Samsung,Yageo
25V 20%
M-C0603
R359
68K -5%
YAGEO,RALEC
M-R0603
L8
GBD3216GA500N
GOTREND
50ohm 400mA
USBP1N
L_USBP1N
L7
GBD3216GA500N
GOTREND
50ohm 400mA
USBP1P
L_USBP1P
C259
47pF
Samsung,Yageo
25V 20%
M-C0603
C260
47pF
Samsung,Yageo
25V 20%
M-C0603
CN5B
VCC
USBD1N
USBD1P
GND
CGND1
CGND2
CGND3
CGND4
GND1
GND2
GND3
GND4
WUS8A2AA
Winwing
VCC3
BC80
0.1uF
Samsung,Yageo
25V 20%
M-C0603
ICH3_PCIRST#
U23A
74LVC125
R246
33 -5%
YAGEO,RALEC
M-R0603
Z2306
P64H2PCIRST#
U23B
74LVC125
R249
33 -5%
YAGEO,RALEC
M-R0603
Z2307
SYSPCIRST#
U23C
74LVC125
R247
33 -5%
YAGEO,RALEC
M-R0603
Z2308
IDE1RST#
R248
33 -5%
YAGEO,RALEC
M-R0603
IDE2RST#
VCC2_5
R239
100 -5%
YAGEO,RALEC
M-R0603
U23D
74LVC125
PCIRST2_5#
11,16,17,18,19
R389
10K -5%
YAGEO,RALEC
M-R0603
IRQ14
R388
4.7K -5%
YAGEO,RALEC
M-R0603
PIO RDY
R386
10K -5%
YAGEO,RALEC
M-R0603
IRQ15
R385
10K -5%
YAGEO,RALEC
M-R0603
SIO RDY
R390
10K -5%
YAGEO,RALEC
M-R0603
PDACT#
R387
10K -5%
YAGEO,RALEC
M-R0603
SDACT#
R195
10K -5%
YAGEO,RALEC
M-R0603
PCBLDET
R194
10K -5%
YAGEO,RALEC
M-R0603
SCBLDET
JP4: BIOS WRITE PROTECT
JP4
HEADER 1X2
GPIO23
FWH_WP#
FLID0
R213
4.7K -5%
YAGEO,RALEC
M-R0603
U19
VPP
RST#
PCBLDET
SCBLDET
RN29
8P4R-4.7K
Yageo,Ralec
Z2309
Z2310
Z2311
FGPI0
FGPI1
FGPI2
FGPI3
FGPI4
WP#
TBL#
ID0
ID1
ID2
ID3
IC(VIL)
INIT#
CLK
SYSPCIRST#
FWH_INIT#
FWH_PCLK
RFU1
RFU2
RFU3
RFU4
RFU5
VCC1
VCC2
VCCa
FWH0
FWH1
FWH2
FWH3
FWH4
LAD0
LAD1
LAD2
LAD3
LFRAME#
GNDa
GND1
GND2
BC69
0.1uF
Samsung,Yageo
25V 20%
M-C0603
FWH_32P_PLCC
INTEL CORPORATION
Title Performance Communications Appliance for the Intel(R) Pen
Size
Document Number
IDE, FWH, USB, BUZZER
Rev
A0
Date: Wednesday, April 09, 2003
Sheet 23 of 41


U10
CORE
EN
PWRGOOD
DPRSL
PBOOT
CLSET
HYS
VDPR
SS
VID5
VID4
VID3
VID2
VID1
VID0
VCC1
VCC2
BST1
TG1
DRN1
BG1
ISH1
CL1
CMP1
CLRF
VCCA
CMPRF
DAC
CMP2
CL2
ISH2
TG2
DRN2
BG2
BST2
PGND1
PGND2
GND
Semtech
SC1476
M-TSSOP38-05M
VRM_ON
ICH3_VRMPWRGD
DPRSL
CPU_VID[0..5]
CPU_VID5
CPU_VID4
CPU_VID3
CPU_VID2
CPU_VID1
CPU_VID0
CPU VCC
+12V
VCC
VCC3
R86 332 -1% YAGEO,RALEC M-R0603
R85 NA -1% YAGEO,RALEC M-R0603
C78 330pF Samsung,Yageo 25V 20% M-C0603
C283 1uF Samsung,Yageo 25V 20% M-C0603
C281 1uF Samsung,Yageo 25V 20% M-C0603
D3 1N5817 Mospec M-D4526
R102 1 -5% YAGEO,RALEC M-R0603
C89 1uF Samsung,Yageo 25V 20% M-C0603
BC50 0.1uF Samsung,Yageo 25V 20% M-C0603
Q12 98N03(TO-252) Fairchild B-STO252G
Q15 6670AL(TO-263) Fairchild
D7 1N5817 Mospec M-D4526
L11 C6018-10C06YDP 0.47uH/25A 25% Gotrend
R173 4.02 -1% M-R0805 YAGEO,RALEC
C143 100pF Samsung,Yageo 25V 20% M-C0603
R375 68 -5% YAGEO,RALEC M-R0805
Z2431
C293 330pF Samsung,Yageo 25V 20% M-C0603
R374 0.002ohm/2512
C291 NA Samsung,Yageo 10V 20% M-R0603
CPUVCC
R110 221 -1% YAGEO,RALEC M-R0603
R118 10K -5% YAGEO,RALEC M-R0603
C91 1000pF Samsung,Yageo 25V 20% M-C0603
R79 10K -1% YAGEO,RALEC M-R0603
R80 619 -1% YAGEO,RALEC M-R0603
R81 750 -1% YAGEO,RALEC M-R0603
C66 0.1uF Samsung,Yageo 25V 20% M-C0603
C67 330pF Samsung,Yageo 25V 20% M-C0603
C68 180pF Samsung,Yageo 25V 20% M-C0603
R369 10 -5% M-R0603 YAGEO,RALEC
C96 1000pF Samsung,Yageo 25V 20% M-C0603
R120 15K -5% YAGEO,RALEC M-R0603
R111 NA(26.7K) -5% YAGEO,RALEC M-R0603
R107 17.4K -5% YAGEO,RALEC M-R0603
R119 24.9K -1% YAGEO,RALEC M-R0603
C107 1000pF Samsung,Yageo 25V 20% M-C0603
R108 NA(61.9K) -5% YAGEO,RALEC M-R0603
C92 68nF Samsung,Yageo 25V 20% M-C0603
R82 619 -1% M-R0603 YAGEO,RALEC
C285 1uF 10V 20% Samsung,Yageo M-C0603
R364 374 -1% YAGEO,RALEC M-R0603
C292 180pF Samsung,Yageo 25V 20% M-C0603
R367 619 -1% YAGEO,RALEC M-R0603
R368 NA -5% YAGEO,RALEC M-R0603
C70 330pF Samsung,Yageo 25V 20% M-C0603
C286 1uF Samsung,Yageo 25V 20%
BC223 330pF Samsung,Yageo 25V 20% M-C0603
C284 330pF Samsung,Yageo 25V 20% M-C0603
R365 750 -1% M-R0603 YAGEO,RALEC
R366 619 -1% YAGEO,RALEC M-R0603
C279 180pF Samsung,Yageo 25V 20%
C69 0.1uF Samsung,Yageo 25V 20% M-C0603
R78 10K -5% YAGEO,RALEC M-R0603
C282 330pF Samsung,Yageo 25V 20% M-C0603
Q4 98N03(TO-252) FAIRCHILD
Q10 6670AL(TO-263) FAIRCHILD
BC27 0.1uF Samsung,Yageo 25V 20% M-C0603
L10 C6018-10C06YDP 0.47uH/25A 25% C6018-10C06YDP Gotrend
D2 1N5817 Mospec M-D4526
R363 68 -5% YAGEO, RALEC M-R0805
C272 330pF Samsung,Yageo 25V 20% M-C0603
R362 0.002ohm/2512
C270 NA Samsung,Yageo 10V 20% M-R0603
R109 1 -5% YAGEO,RALEC M-R0603
D4 1N5817 Mospec M-D4526
BC35 1uF 25V 20% Samsung,Yageo M-C0603
S1 JUMPER CLOSE
RN142 8P4R-10K Yageo,Ralec
R372 NA(0805)
R370 10K -5% YAGEO,RALEC M-R0603
R373 0_0805 -5% YAGEO,RALEC M-R0805
R371 10K -5% YAGEO,RALEC M-R0603
C169 2R5TPB680M Sanyo M-D7343
C182 470uF/16V CAR315 Sanyo
C137 470uF/16V CAR315 Sanyo
C181 470uF/16V Sanyo CAR315
C149 1uF_0805 Samsung,Yageo 16V 20% M-C0805
C155 1uF_0805 Samsung,Yageo 16V 20% M-C0805
C108 10uF_1210 16V 20% Samsung,Yageo M-C1210
C111 10uF_1210 16V 20% Samsung,Yageo M-C1210
C101 10uF_1210 16V 20% Samsung,Yageo M-C1210
C45 10uF_1210 16V 20% Samsung,Yageo M-C1210
C99 10uF_1210 16V 20% Samsung,Yageo M-C1210
C53 10uF_1210 16V 20% Samsung,Yageo M-C1210
C100 10uF_1210 16V 20% Samsung,Yageo M-C1210
C120 10uF_1210 16V 20% Samsung,Yageo M-C1210
C42 10uF_1210 16V 20% Samsung,Yageo M-C1210
C32 10uF_1210 16V 20% Samsung,Yageo M-C1210
C36 10uF_1210 16V 20% Samsung,Yageo M-C1210
C41 10uF_1210 16V 20% Samsung,Yageo M-C1210
INTEL CORPORATION
Title Performance Communications Appliance for the Intel(R) Pen
Size
Document Number CPU CORE VRM
Rev A0
Date: Wednesday, April 09, 2003
Sheet 24 of 41


VCC
C114 0.01uF Samsung,Yageo 25V 20% M-C0603
C134 1uF_0805 Samsung,Yageo 16V 20% M-C0805
+12V
R126 1M -5% YAGEO,RALEC M-R0603
Z2501
C104 1000pF Samsung,Yageo 20% 25V M-C0603
R117 10 -5% YAGEO,RALEC M-R0603
Z2502
C98 1uF Samsung,Yageo 25V 20% M-C0603
C93 0.1uF Samsung,Yageo 25V 20% M-C0603
Z2503
26,27,41 ALL_PWROK
U13
VIN VOUT
VCC BST
VCCA
DH
DL
PGOOD
ILIM
LX
EN/PSV FB
AGND GND
SC1470
M-TSSOP14
Semtech
R129
1K -5%
YAGEO,RALEC
M-R0603
C109 0.01uF Samsung,Yageo 25V 20% M-C0603
Z2505
Z2506
Z2507
Z2510
C103 0.1uF Samsung,Yageo 25V 20% M-C0603
R124 18.7K -1% YAGEO,RALEC M-R0603
R125
1 -5%
YAGEO,RALEC
M-R0603
Z2508
D5
1N5817
Mospec
M-D4526
BC41 0.1uF Samsung,Yageo 25V 20% M-C0603
C124 10uF_1210 Samsung,Yageo 16V 20% M-C1210
Q13 SI4800DY Philip,Vishay M-SO8
C132 10uF_1210 Samsung,Yageo 16V 20% M-C1210
C112 10uF_1210 Samsung,Yageo 16V 20% M-C1210
Q14 SI4810DY Philip,Vishay M-SO8 0.0185ohm
Z2509
D6 1N5817 Mospec M-D4526
R142 4.02 -1% YAGEO,RALEC M-R0805
Z2511
C126 100pF Samsung,Yageo 25V 20% M-C0603
L12
0804-3R3M
Gotrend
3.3uH/5.4A
20% Ra
Z2512
R113 26.1K -1% YAGEO,RALEC M-R0603
R114 10K -1% YAGEO,RALEC M-R0603
Rb
C146 2R5TPB680M Sanyo M-D7343
C294 1uF Samsung,Yageo 25V 20% M-C0603
Ioc set to 14A
Ioc=10uA*R_limit / Rds(on)
VOUT=(1+Ra/Rb)*0.5
VCC1_8
VCC1_8
C151 0.01uF Samsung,Yageo 25V 20% M-C0603
C147 1uF_0805 Samsung,Yageo 16V 20% M-C0805
Q17 SI4800DY Philip,Vishay M-SO8
Q18 SI4800DY Philip,Vishay M-SO8
C160 0.01uF Samsung,Yageo 25V 20% M-C0603
C158 1uF_0805 Samsung,Yageo 16V 20% M-C0805
VCCP
VCC1_2
VOUT=0.5*(1+Ra/Rb)
C159 2R5TPB680M Sanyo M-D7343
R199
Z2514
Z2513
R201 270 -1% YAGEO,RALEC M-R0603
C164 0.01uF Samsung,Yageo 25V 20% M-C0603
2K -5% YAGEO,RALEC M-R0603
U20 SC338
DRV1 IN
ADJ1 DRV2
EN1 ADJ2
PGD1 EN2
GND PGD2
R211 10K -5% YAGEO,RALEC M-R0603
Z2515
Z2516
26,27,41 ALL_PWROK
R204 237 -1% YAGEO,RALEC M-R0603
Z2517
R202
Z2518
2K -1% YAGEO,RALEC M-R0603
C166 0.01uF Samsung,Yageo 25V 20% M-C0603
Z2519
Z2520
ALL_PWROK 26,27,41
C165 0.1uF Samsung,Yageo 25V 20% M-C0603
R205 15K -1% YAGEO,RALEC M-R0603 Ra
R212 10K -1% YAGEO,RALEC M-R0603 Rb
R215 10K -5% YAGEO,RALEC M-R0603
Q27 AMS1117
5VSBY
VIN VOUT
ADJ
M-SOT223 AMS
PIN4=1_8VSBY
Z2533
C204 1uF_0805 Samsung,Yageo 16V 20% M-C0805
R291 301 -1% YAGEO,RALEC M-R0603
R294 150 -1% YAGEO,RALEC M-R0603
C213 10uF_1206 Samsung,Yageo 10V 20% M-C1206
C212 1uF_0805 Samsung,Yageo 16V 20% M-C0805
C215 1uF_0805 Samsung,Yageo 16V 20% M-C0805
1_8VSBY
BC293 0.1uF Samsung,Yageo 25V 20% M-C0603
Q29 AMS1117
5VSBY
VIN VOUT
ADJ
M-SOT223 AMS
PIN4=3VSBY
Z2534
C227 0.1uF Samsung,Yageo 10V 20% M-C0603
R337 215 -1% YAGEO,RALEC M-R0603
R334 374 -1% YAGEO,RALEC M-R0603
C221 10uF_1206 Samsung,Yageo 10V 20% M-C1206
C224 1uF_0805 Samsung,Yageo 16V 20% M-C0805
3VSBY
BC128 0.1uF Samsung,Yageo 25V 20% M-C0603
INTEL CORPORATION
Title Performance Communications Appliance for the Intel(R) Pen
Size
Document Number
1.5V, 1.8V, 2.5V & VCCP
Rev A0
Date: Wednesday, April 09, 2003
Sheet 25 of 41

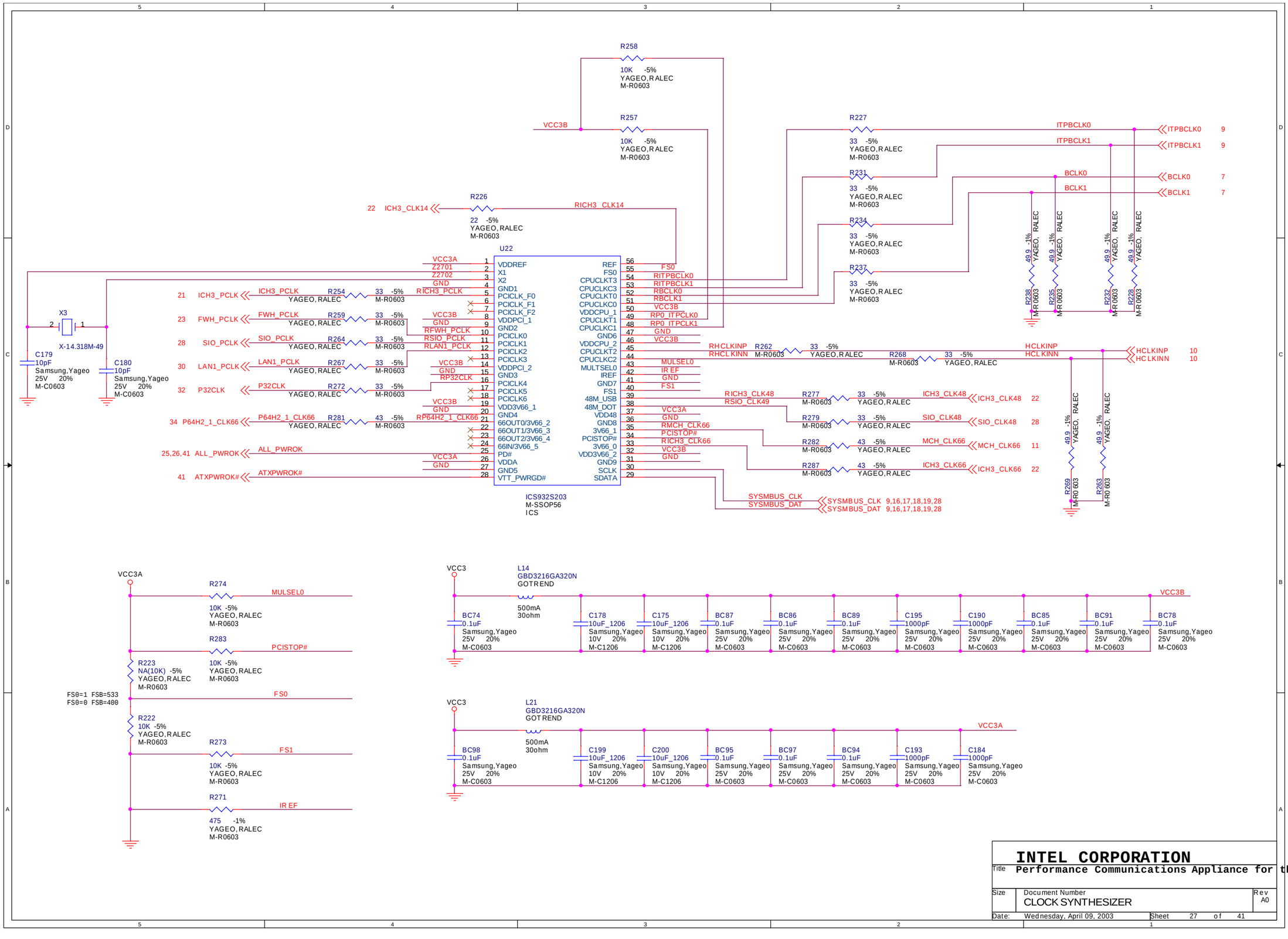


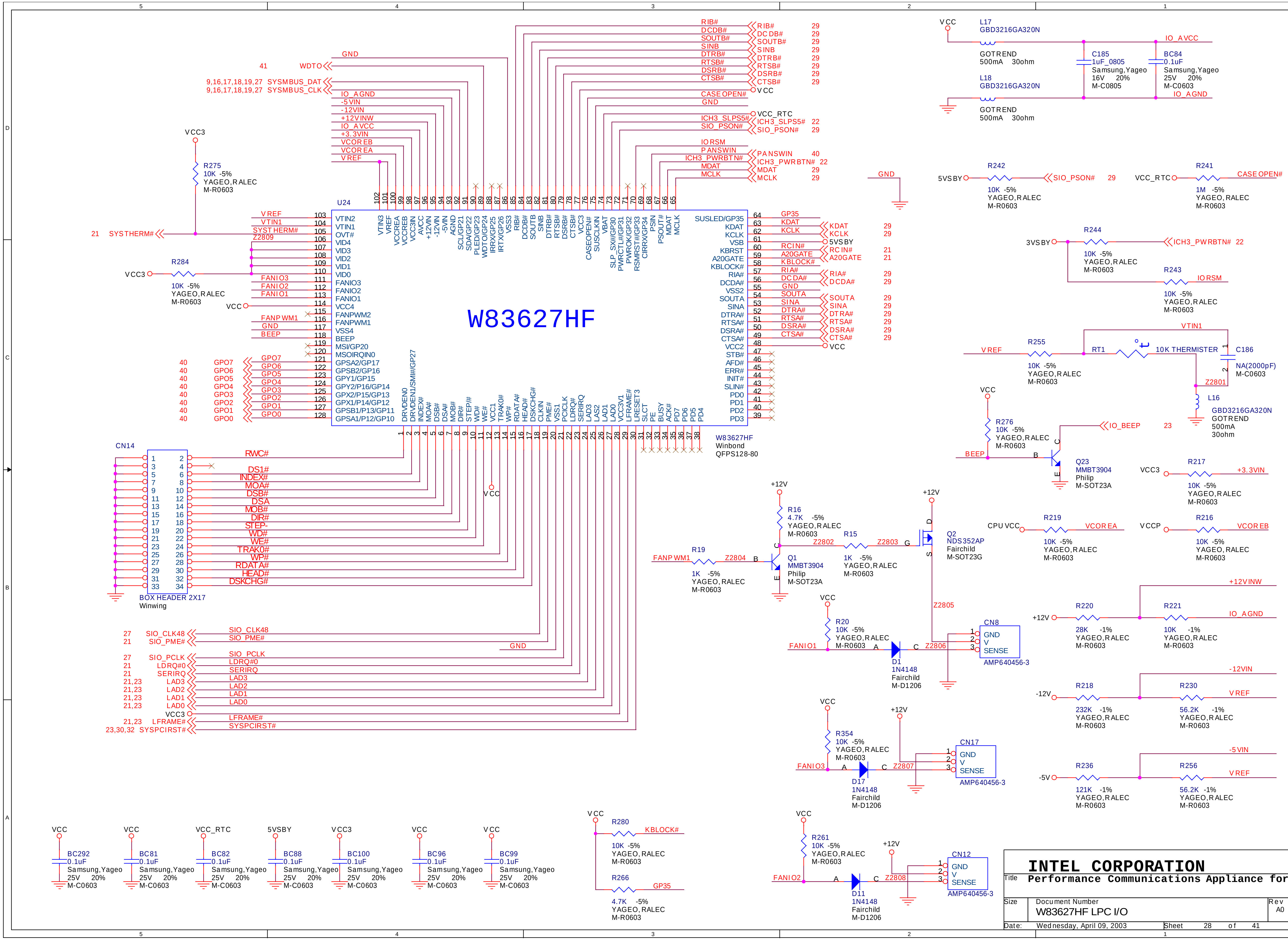
INTEL CORPORATION

Title: Performance Communications Appliance for the Intel(R) Penti

Size | Document Number: DDR TERMINATOR POWER & DECOUPLING | Rev: A0

Date: Wednesday, April 09, 2003 | Sheet 26 of 41


R258
10K -5%
YAGEO,RALEC
M-R0603
R257
10K -5%
YAGEO,RALEC
M-R0603
VCC3B
R226
22 -5%
YAGEO,RALEC
M-R0603
22 ICH3_CLK14
RICH3_CLK14
U22
VDDREF
X1
X2
GND1
PCICLK_F0
PCICLK_F1
PCICLK_F2
VDDPCI_1
GND2
PCICLK0
PCICLK1
PCICLK2
PCICLK3
VDDPCI_2
GND3
PCICLK4
PCICLK5
PCICLK6
VDD3V66_1
GND4
66OUT0/3V66_2
66OUT1/3V66_3
66OUT2/3V66_4
66IN/3V66_5
PD#
VDDA
GND5
VTT_PWRGD#
REF
FS0
CPUCLKT3
CPUCLKC3
CPUCLKT0
CPUCLKC0
VDDCPU_1
CPUCLKT1
CPUCLKC1
GND6
VDDCPU_2
CPUCLKT2
CPUCLKC2
MULTSEL0
IREF
GND7
FS1
48M_USB
48M_DOT
VDD48
GND8
3V66_1
PCISTOP#
3V66_0
VDD3V66_2
GND9
SCLK
SDATA
ICS932S203
M-SSOP56
ICS
X3
X-14.318M-49
C179
10pF
Samsung,Yageo
25V 20%
M-C0603
C180
10pF
Samsung,Yageo
25V 20%
M-C0603
21 ICH3_PCLK
ICH3_PCLK R254 33 -5% RICH3_PCLK
YAGEO,RALEC M-R0603
23 FWH_PCLK
FWH_PCLK R259 33 -5% RFWH_PCLK
28 SIO_PCLK
SIO_PCLK R264 33 -5% RSIO_PCLK
30 LAN1_PCLK
LAN1_PCLK R267 33 -5% RLAN1_PCLK
32 P32CLK
P32CLK R272 33 -5% RP32CLK
34 P64H2_1_CLK66
P64H2_1_CLK66 R281 43 -5% RP64H2_1_CLK66
25,26,41 ALL_PWROK
ALL_PWROK
41 ATXPWROK#
ATXPWROK#
VCC3A
Z2701
Z2702
GND
VCC3B
GND
RP32CLK
VCC3B
GND
RP64H2_1_CLK66
VCC3A
GND
R227
33 -5%
YAGEO,RALEC
M-R0603
R231
33 -5%
YAGEO,RALEC
M-R0603
R234
33 -5%
YAGEO,RALEC
M-R0603
R237
33 -5%
YAGEO,RALEC
M-R0603
ITPBCLK0
ITPBCLK1
BCLK0
BCLK1
49.9 -1% YAGEO, RALEC R238 M-R0603
49.9 -1% YAGEO, RALEC R235 M-R0603
49.9 -1% YAGEO, RALEC R232 M-R0603
49.9 -1% YAGEO, RALEC R228 M-R0603
ITPBCLK0 9
ITPBCLK1 9
BCLK0 7
BCLK1 7
RHCLKINP
RHCLKINN
R262 M-R0603 33 -5% YAGEO,RALEC
R268 M-R0603 33 -5% YAGEO,RALEC
HCLKINP
HCLKINN
HCLKINP 10
HCLKINN 10
RICH3_CLK48
RSIO_CLK49
R277 M-R0603 33 -5% YAGEO,RALEC ICH3_CLK48
R279 M-R0603 33 -5% YAGEO,RALEC SIO_CLK48
R282 M-R0603 43 -5% YAGEO,RALEC MCH_CLK66
R287 M-R0603 43 -5% YAGEO,RALEC ICH3_CLK66
ICH3_CLK48 ICH3_CLK48 22
SIO_CLK48 SIO_CLK48 28
MCH_CLK66 MCH_CLK66 11
ICH3_CLK66 ICH3_CLK66 22
49.9 -1% YAGEO, RALEC R269 M-R0603
49.9 -1% YAGEO, RALEC R263 M-R0603
RMCH_CLK66
PCISTOP#
RICH3_CLK66
VCC3B
GND
SYSMBUS_CLK
SYSMBUS_DAT
SYSMBUS_CLK 9,16,17,18,19,28
SYSMBUS_DAT 9,16,17,18,19,28
VCC3A
R274
10K -5%
YAGEO,RALEC
M-R0603
MULSEL0
R283
10K -5%
YAGEO,RALEC
M-R0603
PCISTOP#
R223
NA(10K) -5%
YAGEO,RALEC
M-R0603
FS0=1 FSB=533
FS0=0 FSB=400
FS0
R222
10K -5%
YAGEO,RALEC
M-R0603
R273
10K -5%
YAGEO,RALEC
M-R0603
FS1
R271
475 -1%
YAGEO,RALEC
M-R0603
IREF
VCC3
L14
GBD3216GA320N
GOTREND
500mA
30ohm
BC74 0.1uF Samsung,Yageo 25V 20% M-C0603
C178 10uF_1206 Samsung,Yageo 10V 20% M-C1206
C175 10uF_1206 Samsung,Yageo 10V 20% M-C1206
BC87 0.1uF Samsung,Yageo 25V 20% M-C0603
BC86 0.1uF Samsung,Yageo 25V 20% M-C0603
BC89 0.1uF Samsung,Yageo 25V 20% M-C0603
C195 1000pF Samsung,Yageo 25V 20% M-C0603
C190 1000pF Samsung,Yageo 25V 20% M-C0603
BC85 0.1uF Samsung,Yageo 25V 20% M-C0603
BC91 0.1uF Samsung,Yageo 25V 20% M-C0603
BC78 0.1uF Samsung,Yageo 25V 20% M-C0603
VCC3B
VCC3
L21
GBD3216GA320N
GOTREND
500mA
30ohm
BC98 0.1uF Samsung,Yageo 25V 20% M-C0603
C199 10uF_1206 Samsung,Yageo 10V 20% M-C1206
C200 10uF_1206 Samsung,Yageo 10V 20% M-C1206
BC95 0.1uF Samsung,Yageo 25V 20% M-C0603
BC97 0.1uF Samsung,Yageo 25V 20% M-C0603
BC94 0.1uF Samsung,Yageo 25V 20% M-C0603
C193 1000pF Samsung,Yageo 25V 20% M-C0603
C184 1000pF Samsung,Yageo 25V 20% M-C0603
VCC3A
INTEL CORPORATION
Title Performance Communications Appliance for the Intel(R) Pen
Size
Document Number
CLOCK SYNTHESIZER
Rev A0
Date: Wednesday, April 09, 2003
Sheet 27 of 41

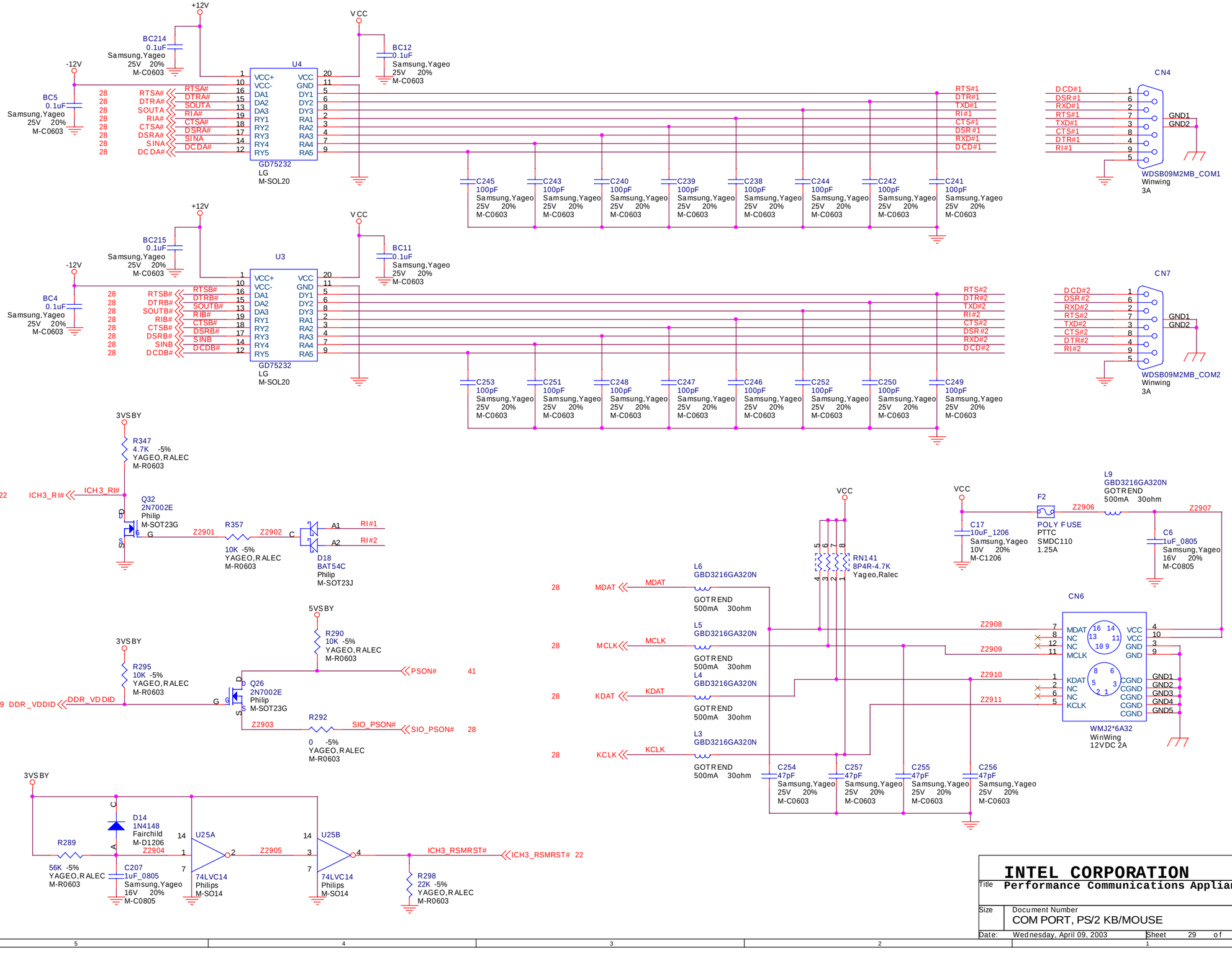


INTEL CORPORATION

Title: Performance Communications Appliance for the Intel(R) Pen

Size: Document Number: W83627HF LPC I/O — Rev: A0

Date: Wednesday, April 09, 2003 — Sheet 28 of 41


+12V
VCC
-12V
BC214
0.1uF
Samsung,Yageo
25V 20%
M-C0603
BC12
0.1uF
Samsung,Yageo
25V 20%
M-C0603
BC5
0.1uF
Samsung,Yageo
25V 20%
M-C0603
U4
VCC+
VCC-
DA1
DA2
DA3
RY1
RY2
RY3
RY4
RY5
VCC
GND
DY1
DY2
DY3
RA1
RA2
RA3
RA4
RA5
GD75232
LG
M-SOL20
RTSA#
DTRA#
SOUTA
RIA#
CTSA#
DSRA#
SINA
DCDA#
RTS#1
DTR#1
TXD#1
RI#1
CTS#1
DSR#1
RXD#1
DCD#1
C245 100pF
C243 100pF
C240 100pF
C239 100pF
C238 100pF
C244 100pF
C242 100pF
C241 100pF
Samsung,Yageo 25V 20% M-C0603
CN4
DCD#1
DSR#1
RXD#1
RTS#1
TXD#1
CTS#1
DTR#1
RI#1
GND1
GND2
WDSB09M2MB_COM1
Winwing
3A
BC215
0.1uF
BC4
0.1uF
U3
BC11
0.1uF
RTSB#
DTRB#
SOUTB#
RIB#
CTSB#
DSRB#
SINB
DCDB#
RTS#2
DTR#2
TXD#2
RI#2
CTS#2
DSR#2
RXD#2
DCD#2
C253 100pF
C251 100pF
C248 100pF
C247 100pF
C246 100pF
C252 100pF
C250 100pF
C249 100pF
CN7
WDSB09M2MB_COM2
3VSBY
R347
4.7K -5%
YAGEO,RALEC
M-R0603
ICH3_RI#
Q32
2N7002E
Philip
M-SOT23G
R357
10K -5%
YAGEO,RALEC
M-R0603
D18
BAT54C
Philip
M-SOT23J
RI#1
RI#2
5VSBY
R290
10K -5%
YAGEO,RALEC
M-R0603
R295
10K -5%
YAGEO,RALEC
M-R0603
DDR_VDDID
Q26
2N7002E
Philip
M-SOT23G
PSON#
SIO_PSON#
R292
0 -5%
YAGEO,RALEC
M-R0603
D14
1N4148
Fairchild
M-D1206
R289
56K -5%
YAGEO,RALEC
M-R0603
C207
1uF_0805
Samsung,Yageo
16V 20%
M-C0805
U25A
U25B
74LVC14
Philips
M-SO14
ICH3_RSMRST#
R298
22K -5%
YAGEO,RALEC
M-R0603
MDAT
MCLK
KDAT
KCLK
L6
L5
L4
L3
GBD3216GA320N
GOTREND
500mA 30ohm
RN141
8P4R-4.7K
Yageo,Ralec
C254 47pF
C257 47pF
C255 47pF
C256 47pF
C17
10uF_1206
Samsung,Yageo
10V 20%
M-C1206
F2
POLY FUSE
PTTC
SMDC110
1.25A
L9
GBD3216GA320N
GOTREND
500mA 30ohm
C6
1uF_0805
Samsung,Yageo
16V 20%
M-C0805
CN6
WMJ2*6A32
WinWing
12VDC 2A
INTEL CORPORATION
Performance Communications Appliance for the Intel(R) Pen
COM PORT, PS/2 KB/MOUSE
Wednesday, April 09, 2003
Sheet 29 of 41
Rev A0

BC216 0.1uF Samsung,Yageo 25V 20% M-C0603
BC212 0.1uF Samsung,Yageo 25V 20% M-C0603
BC210 0.1uF Samsung,Yageo 25V 20% M-C0603
BC217 0.1uF Samsung,Yageo 25V 20% M-C0603
BC213 0.1uF Samsung,Yageo 25V 20% M-C0603
C15 6TPB330M Sanyo M-D7343

VCC3

21,32 AD[0..31]

U1
82551QM

82551

R2 100 -5% M-R0603 YAGEO,RALEC

LINK_LED / LINK_UP_N — A12 — Z3001 — L3_LINK_UP# — L3_LINK_UP# 31,40
ACTLED / ACTIVITY_N — C11 — L3_ACTIVITY# — L3_ACTIVITY# 31,40
SPEEDLED / LINK100_N — B11 — L3_LINK100# — L3_LINK100# 31,40
TO / LINK1000_N — B12

TDP / MDI_PLUS[0] — C13 — L3_MDI_0+ — L3_MDI_0+ 31
TDN / MDI_MINUS[0] — C14 — L3_MDI_0- — L3_MDI_0- 31
RDP / MDI_PLUS[1] — E13 — L3_MDI_1+ — L3_MDI_1+ 31
RDN / MDI_MINUS[1] — E14 — L3_MDI_1- — L3_MDI_1- 31
FLD1 / MDI_PLUS[2] — F13
FLD0 / MDI_MINUS[2] — F14
FLD5 / MDI_PLUS[3] — H13
FLD4 / MDI_MINUS[3] — H14

AD18 — R7 100 -5% YAGEO,RALEC M-R0603 — L3_IDSEL

AD0 N7, AD1 M7, AD2 P6, AD3 P5, AD4 N5, AD5 M5, AD6 P4, AD7 N4, AD8 P3, AD9 N3, AD10 N2, AD11 M1, AD12 M2, AD13 M3, AD14 L1, AD15 L2, AD16 K1, AD17 E3, AD18 D1, AD19 D2, AD20 D3, AD21 C1, AD22 B1, AD23 B2, AD24 B4, AD25 A5, AD26 B5, AD27 B6, AD28 C6, AD29 C7, AD30 A8, AD31 B8

U7
EECS / EE_CS — P7 — Z3002 — 1 CS
FLA15 / EESK / EE_SK — M10 — Z3003 — 2 SK
FLA13 / EEDI / EE_DI — P10 — Z3004 — 3 DI
FLA14 / EEDO /EE_DO — N10 — Z3005 — 4 DO
VCC 8, NC 7, ORG 6, GND 5
93C46_2.7V Atmel

VCC3 — BC211 0.1uF Samsung,Yageo 25V 20% M-C0603 — Z3006
VCC3 — R21 NA(4.7K) -5% YAGEO,RALEC M-R0603

FLA11 / CLKEN / SDP[7] — M12
FLA10 / MRING# / SDP[6] — N13
FLA9 / SDP[1] — P13
FLA8 / IOCHRDY / SDP[0] — N14

FLA5 / JTAG_TMS — L12
FLA7 / JTAG_TDI — M13
FLA6 / JTAG_TDO — M14
FLA3 /JTAG_TCK — L14
FLA4 / PCIMODE# / JATAG_RESET_N — L13
TEST/TEST — A13 — Z3007

R3 3.3K -5% YAGEO,RALEC M-R0603

FLA0 / RESERVED — J13
FLD6 / RESERVED — H12
FLD2 / RESERVED — F12
CSTSCHG / WOL / APM_WAKEUP — C5

FLA16 / CLK25 /FLSH_S0 — P9
FLA12 / MCNTSM# / FLSH_SI — M11
FLCS# / FLSH_SCK — N9
FLWE# / FLSH_CE_N — M9

VCC3 — R12 — NA(3.3K) -5% YAGEO,RALEC M-R0603

FLA1 / AUXPWR / AUX_PWR — J12 — Z3008
FLOE# / RESERVED_CLK — M8
NCH4 / PCIZN — H4
NCG4 / PCIZP — G4

R5 549 -1% M-R0603 YAGEO,RALEC

RBIAS10 / PHYREF — B14 — Z3009
RBIAS100 / CTRL_25 — B13 — Z3010

R4 619 -1% YAGEO,RALEC M-R0603

X2 / CTRL_15 — P11 — Z3011
X1 / NC — N11 — Z3012

X1 25MHz
C19 22pF Samsung, Yageo 25V 20% M-C0603
C18 22pF Samsung, Yageo 25V 20% M-C0603

CBE#0 — 21,32 CBE#0 — M4 — C_BE#0 / PCI_CBE_N[0]
CBE#1 — 21,32 CBE#1 — L3 — C_BE#1 / PCI_CBE_N[1]
CBE#2 — 21,32 CBE#2 — F3 — C_BE#2 / PCI_CBE_N[2]
CBE#3 — 21,32 CBE#3 — C4 — C_BE#3 / PCI_CBE_N[3]

FRAME# — 21,32 FRAME# — F2 — FRAME# / PCI_FRAME_N
IRDY# — 21,32 IRDY# — F1 — IRDY# / PCI_IRDY_N
TRDY# — 21,32 TRDY# — G3 — TRDY# / PCI_TRDY_N
DEVSEL# — 21,32 DEVSEL# — H3 — DEVSEL# / PCI_DEVSEL_N
STOP# — 21,32 STOP# — H1 — STOP# / PCI_STOP_N
PAR — 21,32 PAR — J1 — PAR / PCI_PAR
PIRQB# — 21,32 PIRQB# — H2 — INTA# / PCI_INTA_N
PERR# — 21,32 PERR# — J2 — PERR# / PCI_PERR_N
SERR# — 21,32 SERR# — A2 — SERR# / PCI_SERR_N
L3_IDSEL — A4 — IDSEL / PCI_IDSEL
ICH3_REQ#0 — 21 ICH3_REQ#0 — C3 — REQ# / PCI_REQ_N
ICH3_GNT#0 — 21 ICH3_GNT#0 — J3 — GNT# / PCI_GNT_N
C2 — RST# / M66EN
LAN1_PCLK — 27 LAN1_PCLK — G1 — CLK / PCI_CLK
SYSPCIRST# — 23,28,32 SYSPCIRST# — B9 — ISOLATE# / PCI_RST_N

A9 — ALTRST# / LAN_PER_GOOD
PME# — 21,36,37 PME# — A6 — PME# / PCI_PME_N

RN1 8P4R-10K
VCC3 — Z3014 — A10 — SMBCK / SMB_CLK
Z3015 — C9 — SMBD / SMB_CLK
Z3016 — B10 — SMBALRT# / PWRGOOD_SMB_ALERT_N

VCC — R9 100K -5% YAGEO,RALEC M-R0603 — Z3017 — G2 — VIO
BC3 0.1uF Samsung,Yageo 25V 20% M-C0603

K14 — FLA2 / XTAL1
J14 — FLD7 / XTAL2

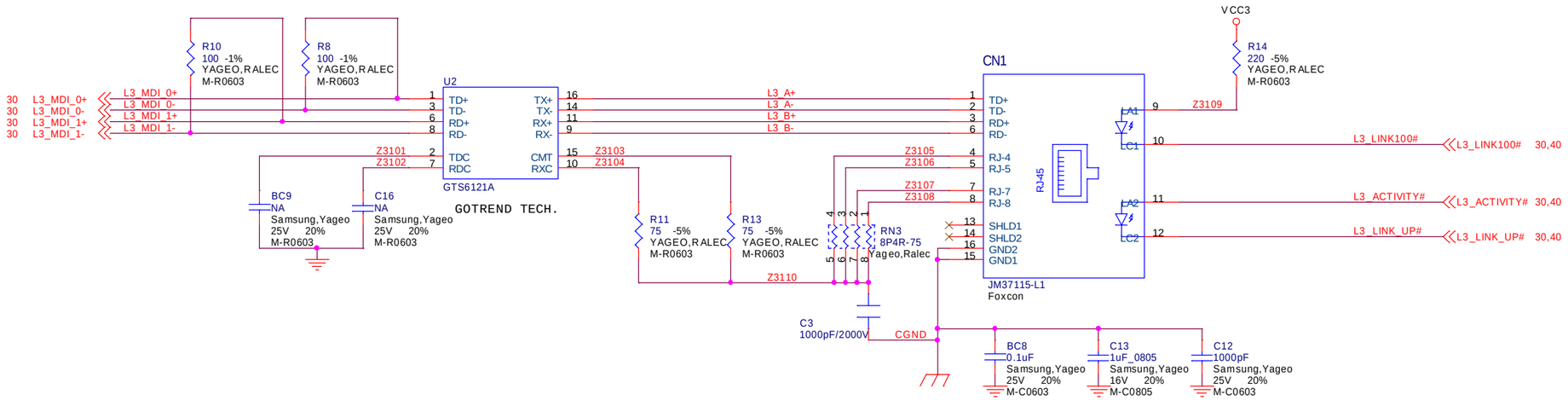
R6 100K -5% YAGEO,RALEC M-R0603 — Z3018
VCC3 — R1 100K -5% YAGEO,RALEC M-R0603 — Z3019

RN2 8P4R-10K Yageo,Ralec
Z30 13 — L3_TDI — L3_TCK

INTEL CORPORATION

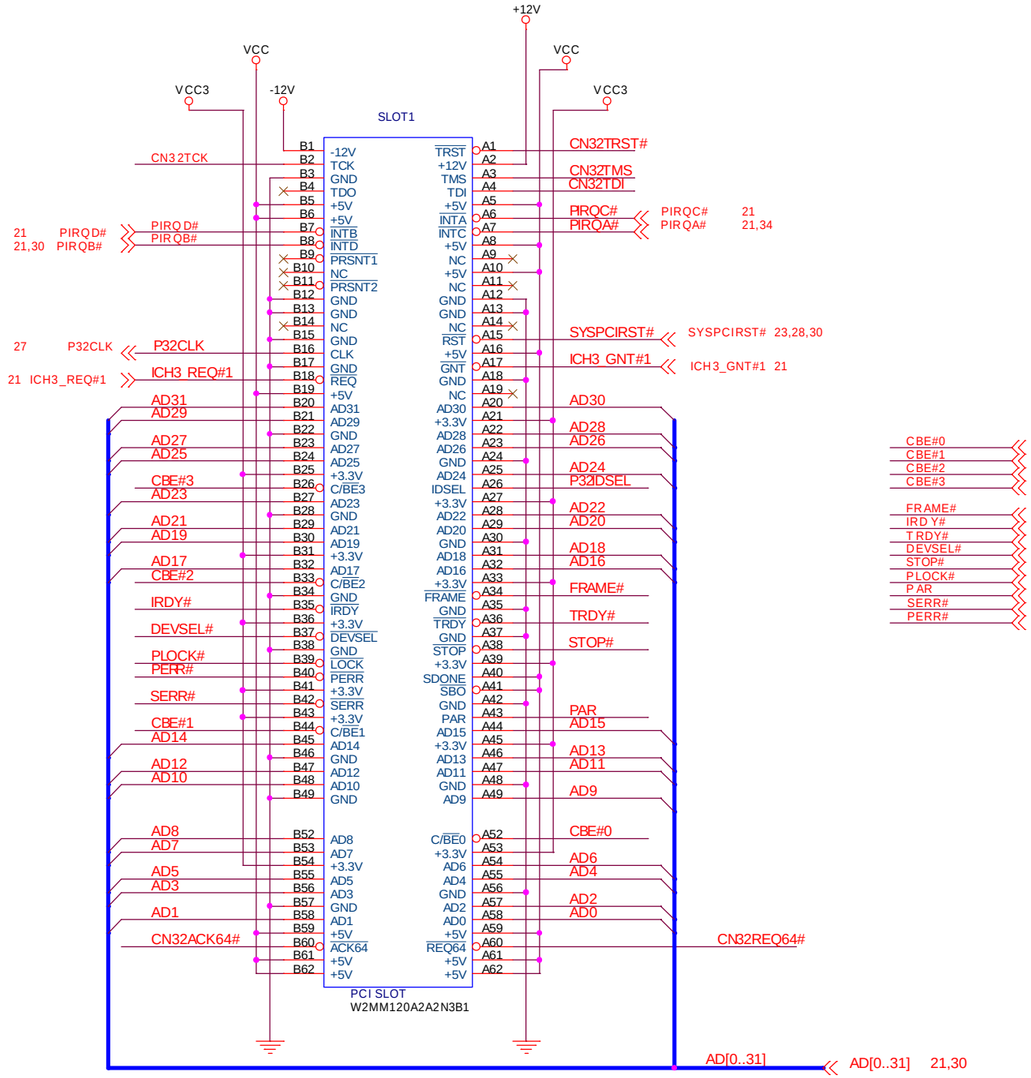
Title: Performance Communications Appliance for the Intel(R) Pen

Size	Document Number	Rev
	82551QM ETHERNET PART1	A0
Date: Wednesday, April 09, 2003	Sheet 30 of 41	



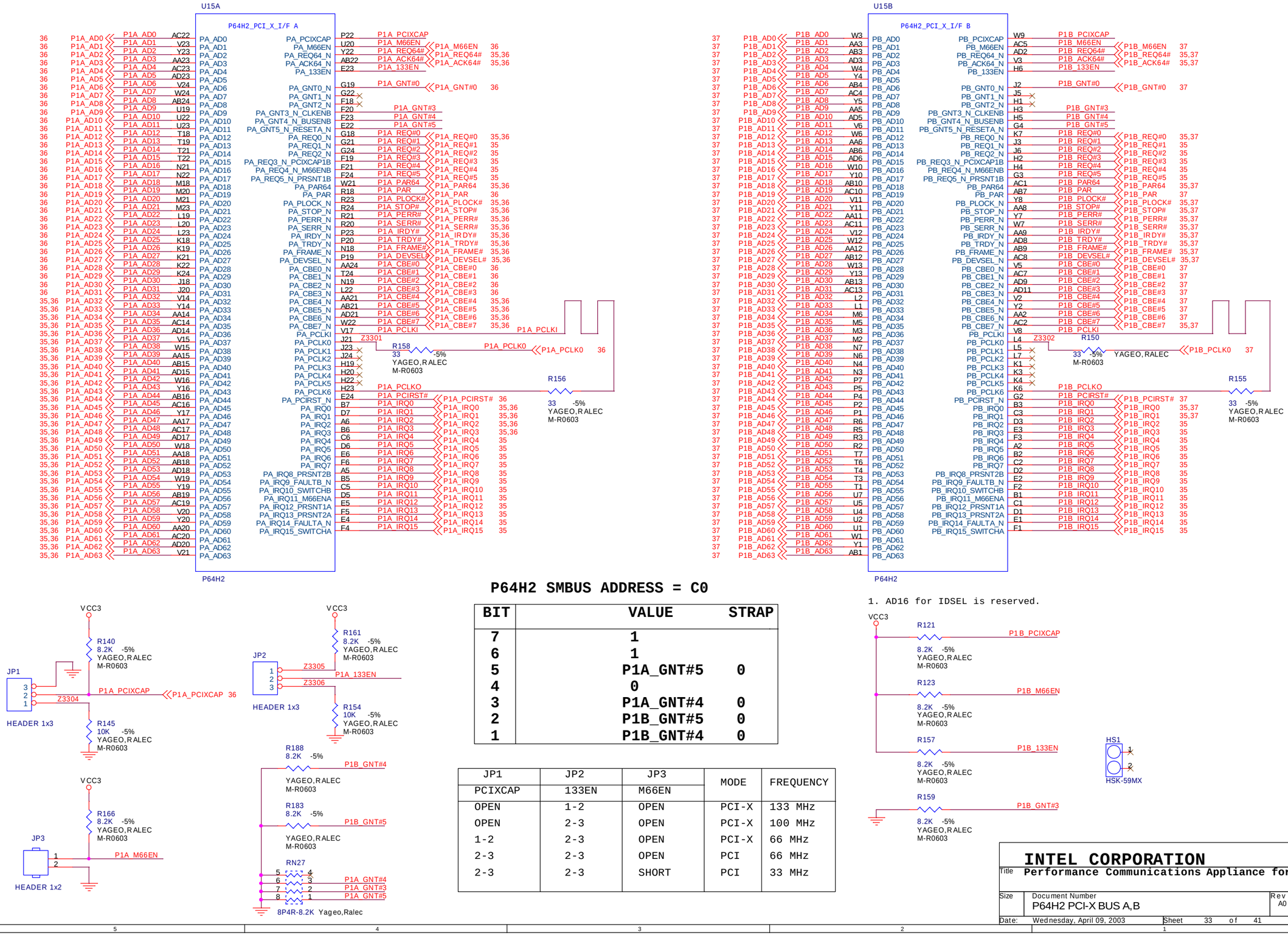
INTEL CORPORATION

Title	Performance Communications Appliance for the Intel(R) Pen	
Size	Document Number: 82551QM ETHERNET PART2	Rev: A0
Date: Wednesday, April 09, 2003	Sheet 31 of 41	



INTEL CORPORATION

Title	Performance Communications Appliance for the Intel(R) Pen	
Size	Document Number: 32Bit PCI SLOT	Rev: A0
Date: Wednesday, April 09, 2003	Sheet 32 of 41	



P64H2 SMBUS ADDRESS = C0

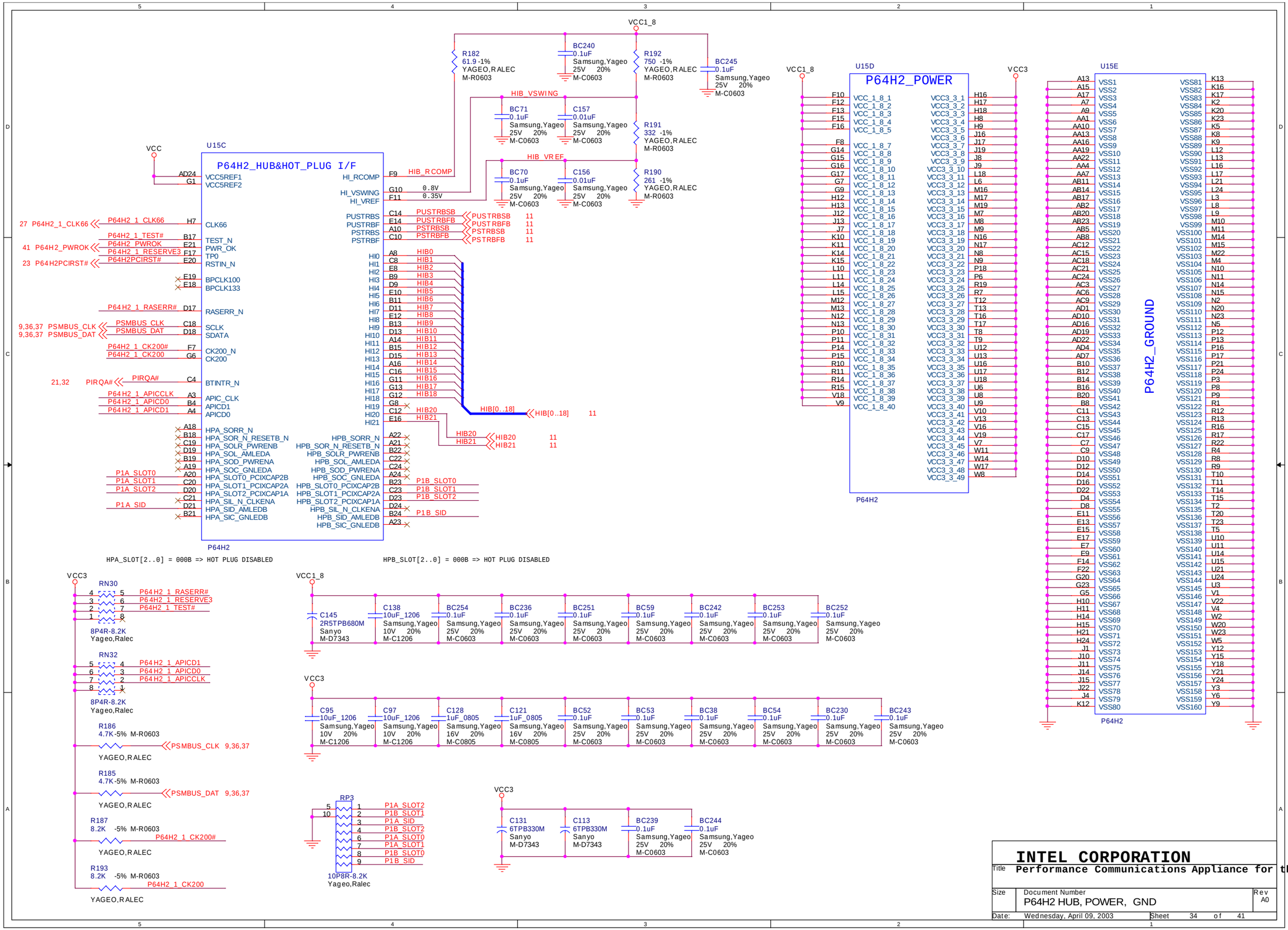
BIT	VALUE	STRAP
7	1	
6	1	
5	P1A_GNT#5	0
4	0	
3	P1A_GNT#4	0
2	P1B_GNT#5	0
1	P1B_GNT#4	0

JP1 PCIXCAP	JP2 133EN	JP3 M66EN	MODE	FREQUENCY
OPEN	1-2	OPEN	PCI-X	133 MHz
OPEN	2-3	OPEN	PCI-X	100 MHz
1-2	2-3	OPEN	PCI-X	66 MHz
2-3	2-3	OPEN	PCI	66 MHz
2-3	2-3	SHORT	PCI	33 MHz

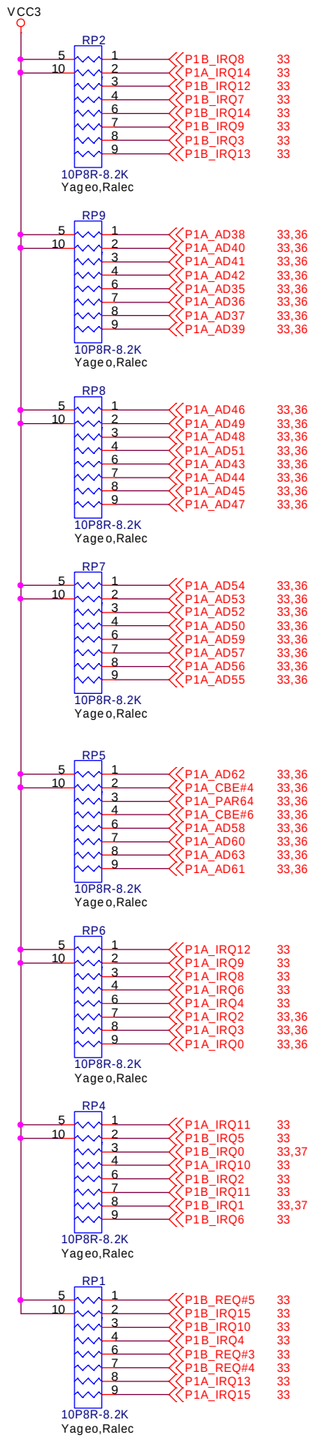
1. AD16 for IDSEL is reserved.

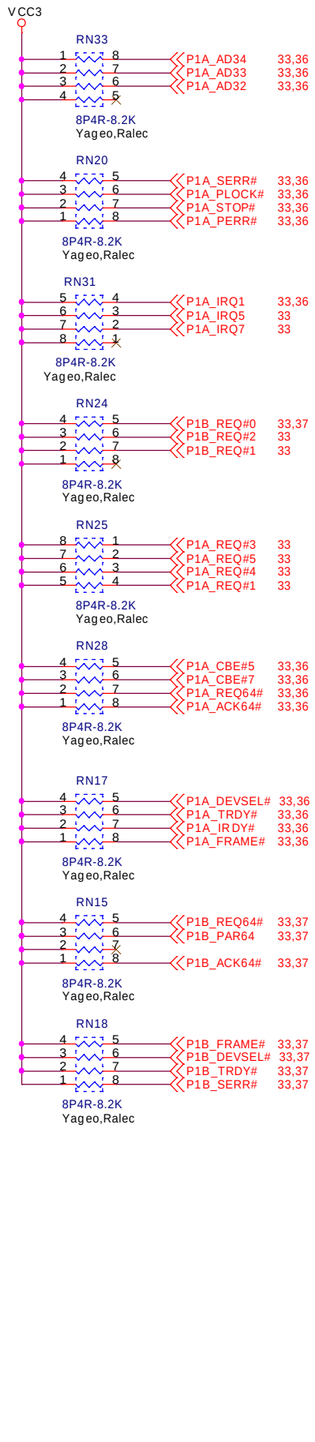
INTEL CORPORATION

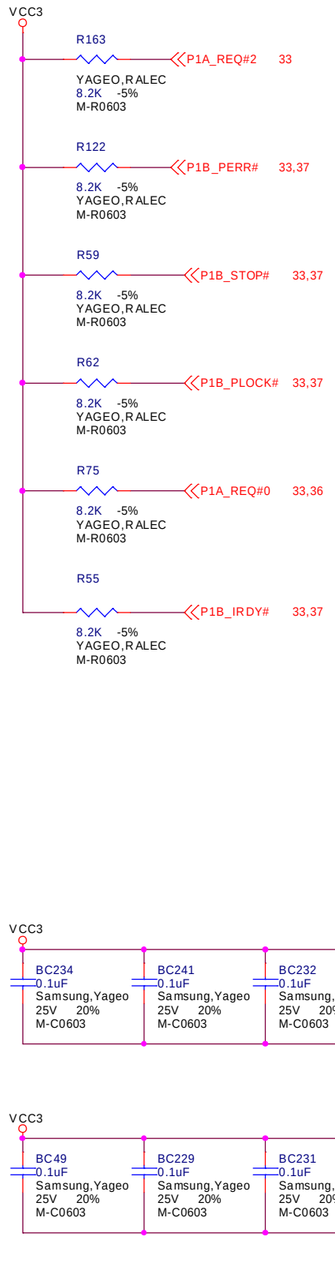
Title	Performance Communications Appliance for the Intel(R) Pen	
Size	Document Number: P64H2 PCI-X BUS A,B	Rev A0
Date: Wednesday, April 09, 2003	Sheet 33 of 41	

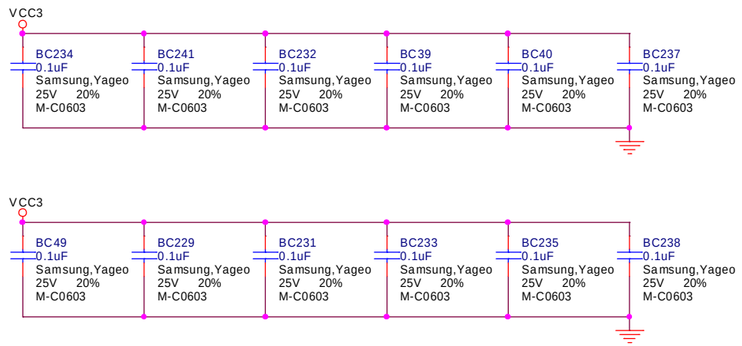


Title	INTEL CORPORATION Performance Communications Appliance for the Intel(R) Pen
Size	Document Number: P64H2 HUB, POWER, GND — Rev A0
Date:	Wednesday, April 09, 2003 — Sheet 34 of 41





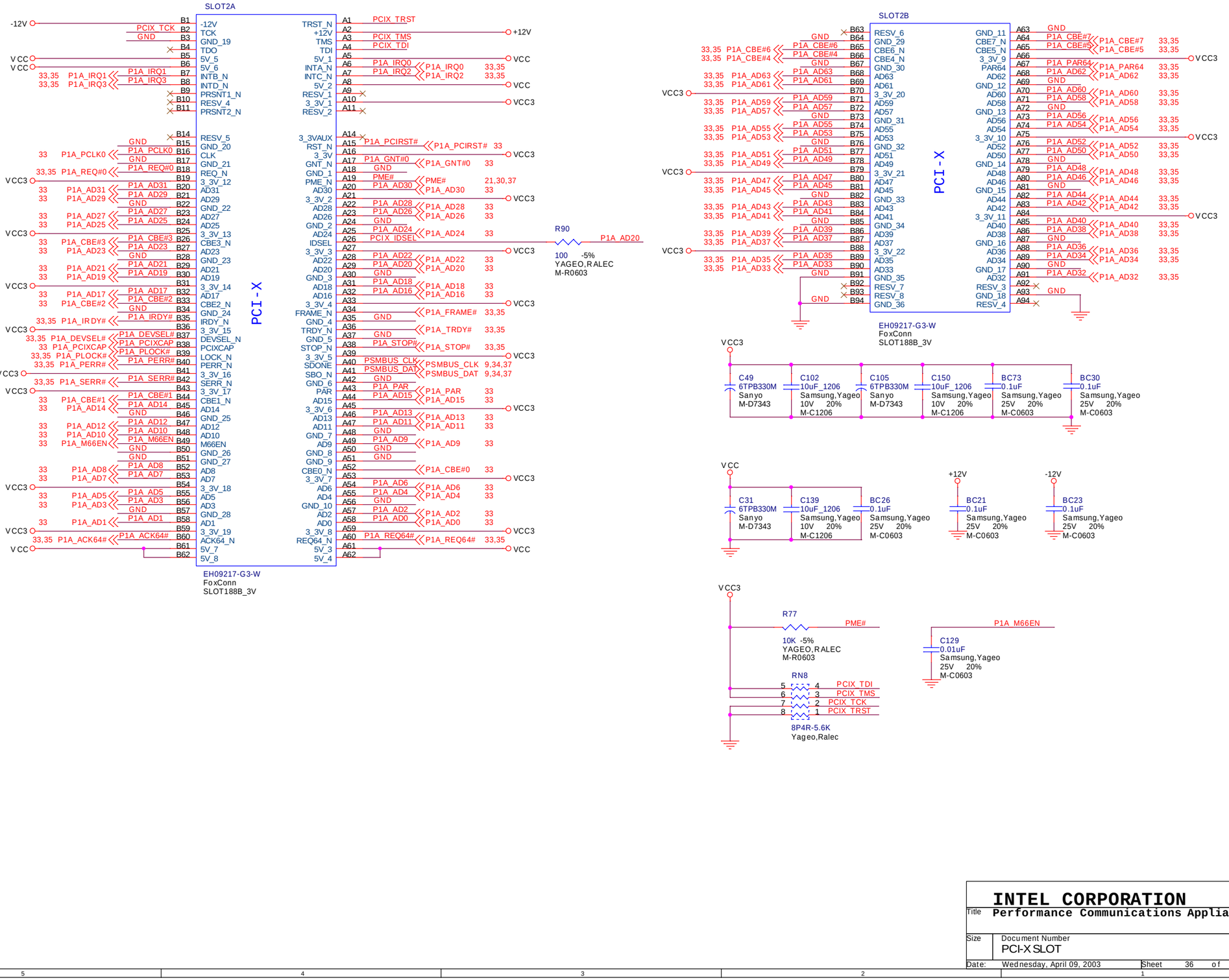




INTEL CORPORATION

Title: Performance Communications Appliance for the Intel(R) Pen

Size	Document Number	Rev
	P64H2 TERMINATORS	A0
Date: Wednesday, April 09, 2003	Sheet 35 of 41	

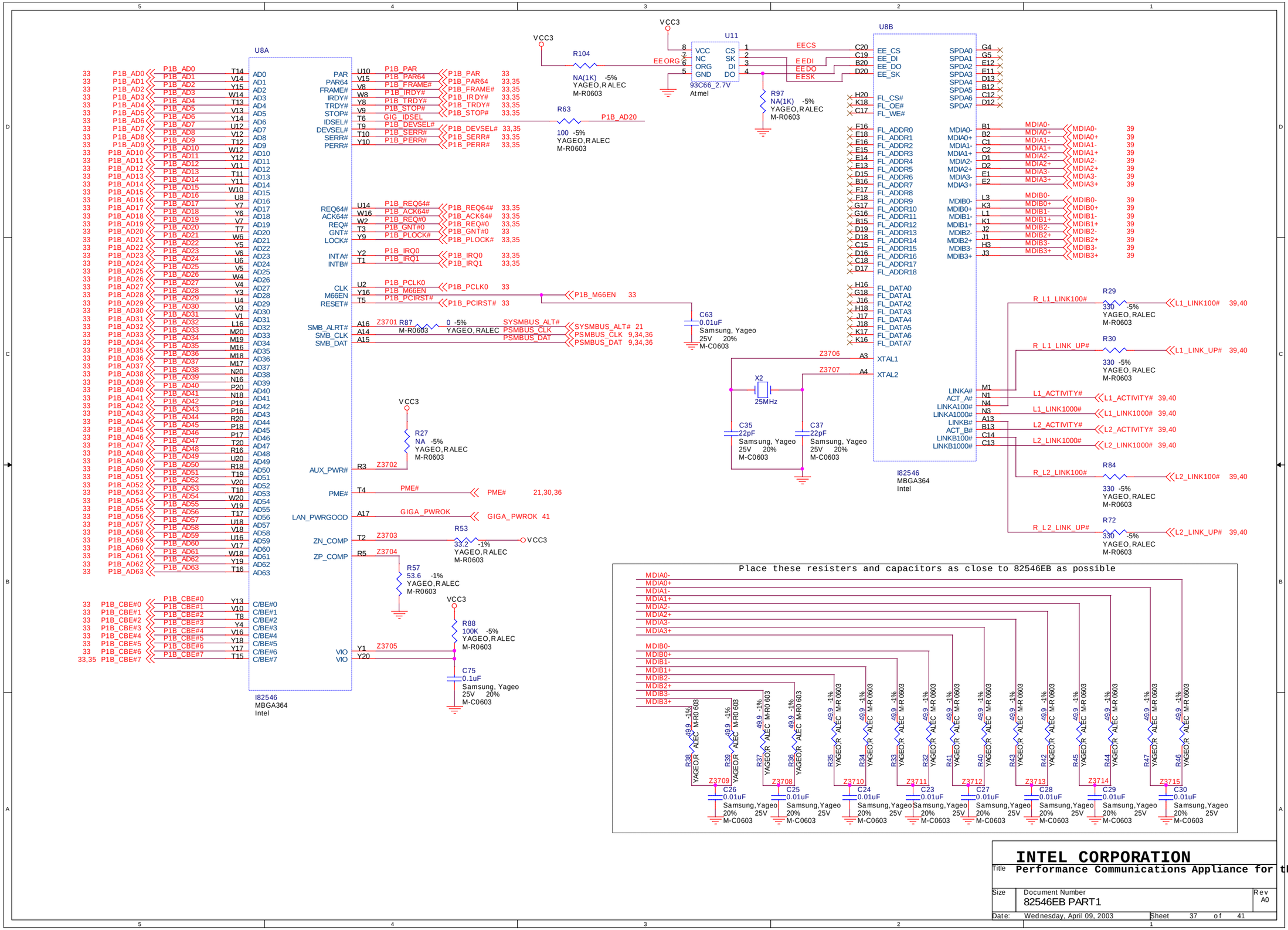


INTEL CORPORATION

Title: Performance Communications Appliance for the Intel(R) Pen

Size	Document Number	Rev
	PCI-X SLOT	A0

Date: Wednesday, April 09, 2003 Sheet 36 of 41


U8A
U8B
U11
93C66_2.7V
Atmel
I82546
MBGA364
Intel
VCC3
R104
NA(1K) -5%
YAGEO,RALEC
M-R0603
EEORG
EECS
EEDI
EEDO
EESK
R97
NA(1K) -5%
YAGEO,RALEC
M-R0603
R63
100 -5%
YAGEO,RALEC
M-R0603
P1B_AD20
C63
0.01uF
Samsung, Yageo
25V 20%
M-C0603
P1B_M66EN 33
SYSMBUS_ALT# 21
PSMBUS_CLK 9,34,36
PSMBUS_DAT 9,34,36
Z3706
Z3707
X2
25MHz
C35
22pF
Samsung, Yageo
25V 20%
M-C0603
C37
22pF
Samsung, Yageo
25V 20%
M-C0603
R27
NA -5%
YAGEO,RALEC
M-R0603
AUX_PWR#
PME# 21,30,36
GIGA_PWROK 41
R53
33.2 -1%
YAGEO,RALEC
M-R0603
R57
53.6 -1%
YAGEO,RALEC
M-R0603
R88
100K -5%
YAGEO,RALEC
M-R0603
C75
0.1uF
Samsung, Yageo
25V 20%
M-C0603
R29
330 -5%
YAGEO, RALEC
M-R0603
R30
330 -5%
YAGEO, RALEC
M-R0603
R84
330 -5%
YAGEO, RALEC
M-R0603
R72
330 -5%
YAGEO, RALEC
M-R0603
L1_LINK100# 39,40
L1_LINK_UP# 39,40
L1_ACTIVITY# 39,40
L1_LINK1000# 39,40
L2_ACTIVITY# 39,40
L2_LINK1000# 39,40
L2_LINK100# 39,40
L2_LINK_UP# 39,40
Place these resisters and capacitors as close to 82546EB as possible
R38 R39 R37 R36 R35 R34 R33 R32 R41 R40 R43 R42 R45 R44 R47 R46
49.9 -1% YAGEO,RALEC M-R0603
Z3709 Z3708 Z3710 Z3711 Z3712 Z3713 Z3714 Z3715
C26 C25 C24 C23 C27 C28 C29 C30
0.01uF Samsung,Yageo 20% 25V M-C0603
INTEL CORPORATION
Title Performance Communications Appliance for the Intel(R) Pen
Size Document Number 82546EB PART1 Rev A0
Date: Wednesday, April 09, 2003 Sheet 37 of 41

U8C

VCC3: B8, B14, B19, C10, C16, D6, D11, E17, H4, H19, L17, M2, N19, R4, R17, U1, U3, U7, U11, U15, U19, W1, W5, W9, W13, W17

LAN1.5V: G7, G8, G9, G12, G13, G14, H7, H8, H13, H14, J7, J14, M7, M14, N7, N8, N13, N14, P7, P8, P9, P12, P13, P14 — VCC1_5

VCC3: B4, F1 — AVDDH(3.3)

LAN2.5V: A19, G1, G2, G3 — AVDDLA(2.5); L2, L5, L18 — AVDDLB(2.5)

GND: A1, A2, A5, A10, B3, B6, B11, B17, C3, D3, D14, D8, E19, F3, G10, G11, H2, H9, H10, H11, H12, H17, J8, J9, J10, J11, J12, J13, K2, K4, K5, K7, K8, K9, K10, K11, K12, K13, K14, L7, L8, L9, L10, L11, L12, L13, L14, L19, M4, M8, M9, M10, M11, M12, M13, N9, N10, N11, N12, N17, P10, P11, R1, R2, R19, U5, U9, U13, U17, V2, W3, W7, W11, W15, W19

I82546 MBGA364 Intel

POWER REQUIREMENT:
3.3V : 250mA
2.5V : 500mA
1.5V : 940mA

U8D

NC: A11, A12, F4, F5, F19, F20, G19, G20, H1, J4, J5, J19, J20, K19, K20, N2, M3

CTRL_15 A18
CTRL_25A F2
CTRL_25B H5
SIG_DETECT_B L20 — SIG_DETECT_B
SIG_DETECT_A E20 — SIG_DETECT_A

RESERVED0 D4 Z3803
RESERVED1 D5 Z3804
RESERVED2 C4 Z3805
RESERVED3 E4 Z3806
RESERVED4 C5 Z3807
RESERVED5 E5
RESERVED6 B5
RESERVED7 E6 Z3808
RESERVED8 D7
RESERVED9 C7
RESERVED10 E10 Z3809
RESERVED11 B7
RESERVED12 A7
RESERVED13 C8 Z3810
RESERVED14 E8
RESERVED15 E9
RESERVED16 D9 Z3811
RESERVED17 C9 Z3812
RESERVED18 B9 Z3813
RESERVED19 D10 Z3814
RESERVED20 A9
RESERVED21 C11
RESERVED22 B10
RESERVED23 C6 Z3815
RESERVED24 A20 Z3816
RESERVED25 B18 Z3817
RESERVED26 M5 Z3818
RESERVED27 E7
RESERVED28 A6

RN11 8P4R-680 Yageo,Ralec: D4/D5/C4/E4 — SIG_DETECT_B
RN12 8P4R-680 Yageo,Ralec: E5/B5/D7/C7
RN13 8P4R-680 Yageo,Ralec: B7/A7/E8/E9
RN14 8P4R-680 Yageo,Ralec: C8/E10/D9/C9

R92 8.2K -5% YAGEO,RALEC M-R0603 — SIG_DETECT_B
R91 8.2K -5% YAGEO,RALEC M-R0603 — SIG_DETECT_A

CLK_VIEW P3 Z3819
JTAG_TCK P1 G_TCK
JTAG_TDI P4 G_TDI
JTAG_TDO P2
JTAG_TMS P5 G_TMS
JTAG_TRST# N5 G_TRST#
TEST A8 Z3820

R28 1K -5% YAGEO,RALEC M-R0603
R71 NA(1K) -5% YAGEO,RALEC M-R0603

RN6 8P4R-1K Yageo,Ralec: G_TCK, G_TDI, G_TMS, G_TRST#

Z3801 E3 REF_A
Z3802 L4 REF_B

R54 2.49K -5% YAGEO,RALEC M-R0603
R31 2.49K -5% YAGEO,RALEC M-R0603

I82546 MBGA364 Intel

VCC — Q6 AMS1085-ADJ(TO-252): VIN, OUT, ADJ/GND

C81 0.1uF Samsung,Yageo 25V 20% M-C0603
C72 1uF Samsung,Yageo 10V 20% M-C0603
R76 100 -1% YAGEO,RALEC M-R0603
R83 100 -1% YAGEO,RALEC M-R0603
C38 100uF/16V_D
C46 0.1uF Samsung,Yageo 25V 20% M-C0603

LAN2.5V

Q3 AMS1085-ADJ(TO-252) AMS B-STO252: VIN, VOUT, ADJ

VCC3
C56 10uF_1206 Samsung,Yageo 10V 20% M-C1206
C54 1uF_0805 Samsung,Yageo 16V 20% M-C0805
Z3821
R68 499 -1% YAGEO,RALEC M-R0603
R69 100 -1% YAGEO,RALEC M-R0603

LAN1.5V
C55 6TPB330M Sanyo M-D7343
BC219 0.1uF Samsung,Yageo 25V 20% M-C0603
BC222 0.1uF Samsung,Yageo 25V 20% M-C0603

LAN1.5V
C43 4.7uF_0805 Samsung,Yageo 20% 16V M-C0805
C271 0.01uF Samsung,Yageo 25V 20% M-C0603
C47 4.7uF_0805 Samsung,Yageo 16V 20% M-C0805
C269 0.01uF Samsung,Yageo 25V 20% M-C0603
C51 4.7uF_0805 Samsung,Yageo 16V 20% M-C0805
C266 0.01uF Samsung,Yageo 25V 20% M-C0603
C39 4.7uF_0805 Samsung,Yageo 16V 20% M-C0805
C275 0.01uF Samsung,Yageo 25V 20% M-C0603

VCC3
C64 0.01uF Samsung,Yageo 25V 20% M-C0603
C273 0.01uF Samsung,Yageo 25V 20% M-C0603
C268 0.01uF Samsung,Yageo 25V 20% M-C0603
C262 0.01uF Samsung,Yageo 25V 20% M-C0603
C276 0.01uF Samsung,Yageo 25V 20% M-C0603
C83 0.01uF Samsung,Yageo 25V 20% M-C0603
C264 0.01uF Samsung,Yageo 25V 20% M-C0603
C277 0.01uF Samsung,Yageo 25V 20% M-C0603

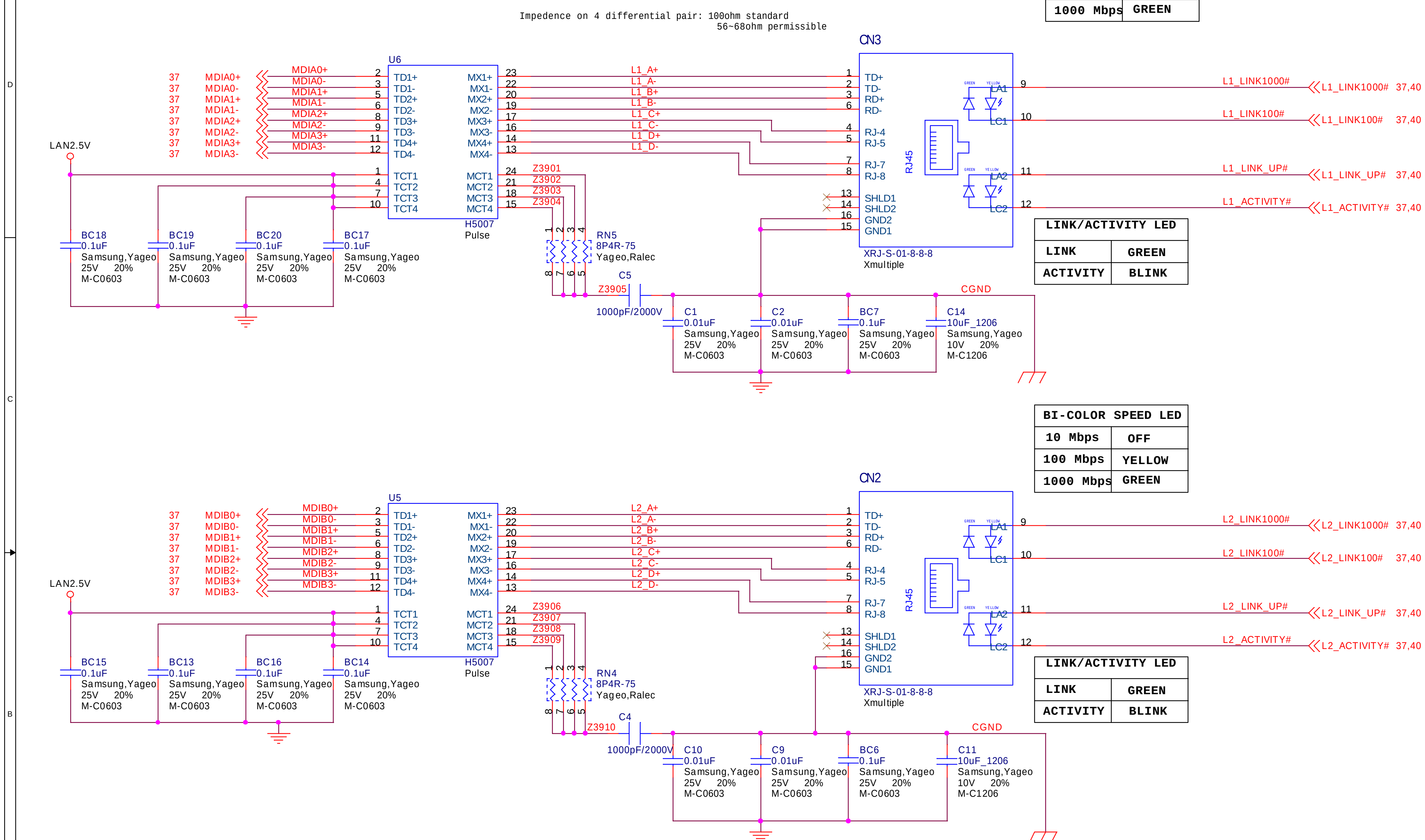
LAN2.5V
C71 4.7uF_0805 Samsung,Yageo 16V 20% M-C0805
C263 0.01uF Samsung,Yageo 25V 20% M-C0603
C61 4.7uF_0805 Samsung,Yageo 16V 20% M-C0805
C80 0.01uF Samsung,Yageo 25V 20% M-C0603
C265 4.7uF_0805 Samsung,Yageo 16V 20% M-C0805
C76 0.01uF Samsung,Yageo 25V 20% M-C0603
C82 4.7uF_0805 Samsung,Yageo 16V 20% M-C0805
C261 0.01uF Samsung,Yageo 25V 20% M-C0603

INTEL CORPORATION

Title: Performance Communications Appliance for the Intel(R) Pen

Size: Document Number 82546EB PART2 Rev A0

Date: Wednesday, April 09, 2003 Sheet 38 of 41



BI-COLOR SPEED LED	
10 Mbps	OFF
100 Mbps	YELLOW
1000 Mbps	GREEN

LINK/ACTIVITY LED	
LINK	GREEN
ACTIVITY	BLINK

BI-COLOR SPEED LED	
10 Mbps	OFF
100 Mbps	YELLOW
1000 Mbps	GREEN

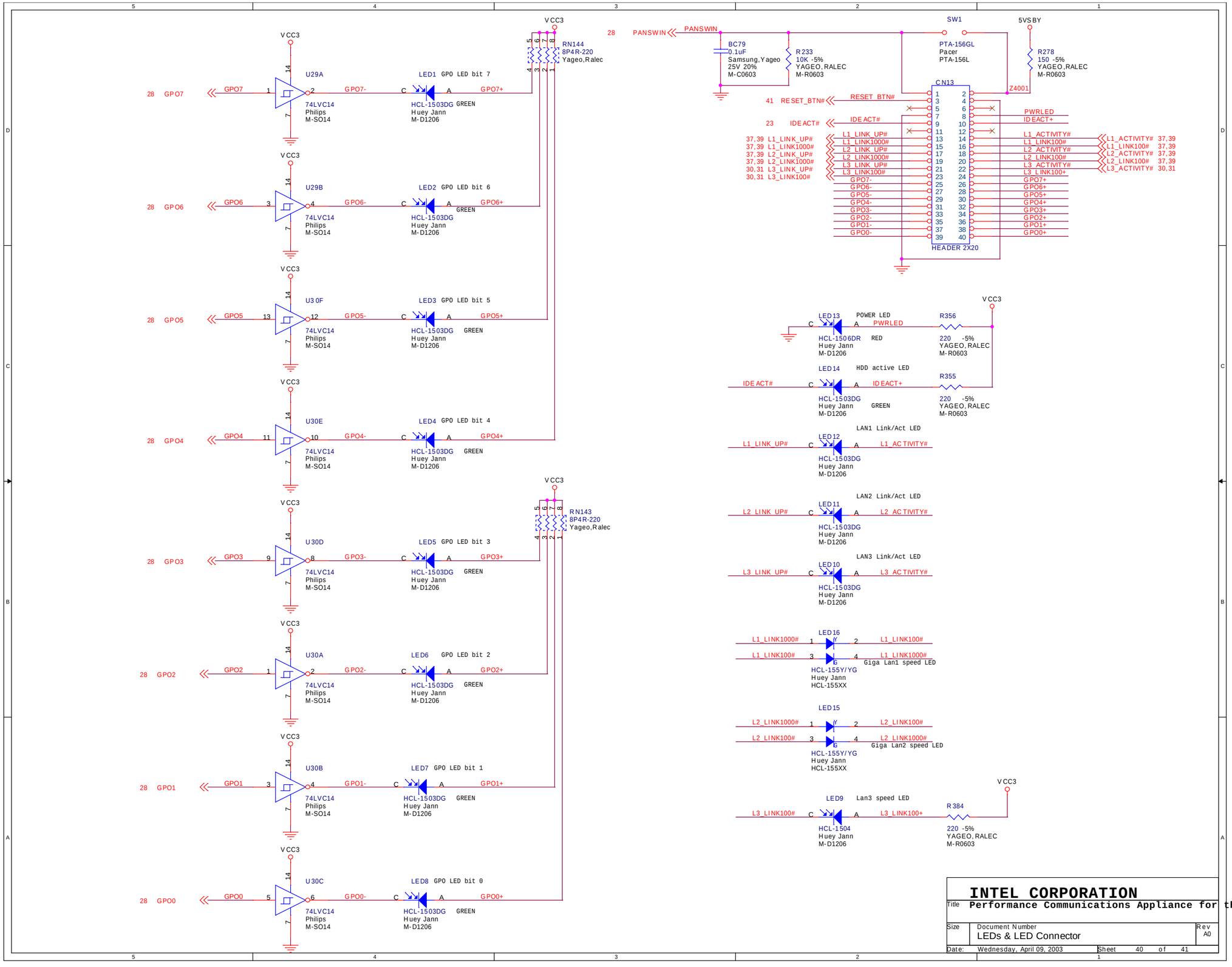
LINK/ACTIVITY LED	
LINK	GREEN
ACTIVITY	BLINK

INTEL CORPORATION

Title: Performance Communications Appliance for the Intel(R) Pen

Size | Document Number: 82546EB PART3 | Rev: A0

Date: Wednesday, April 09, 2003 | Sheet 39 of 41

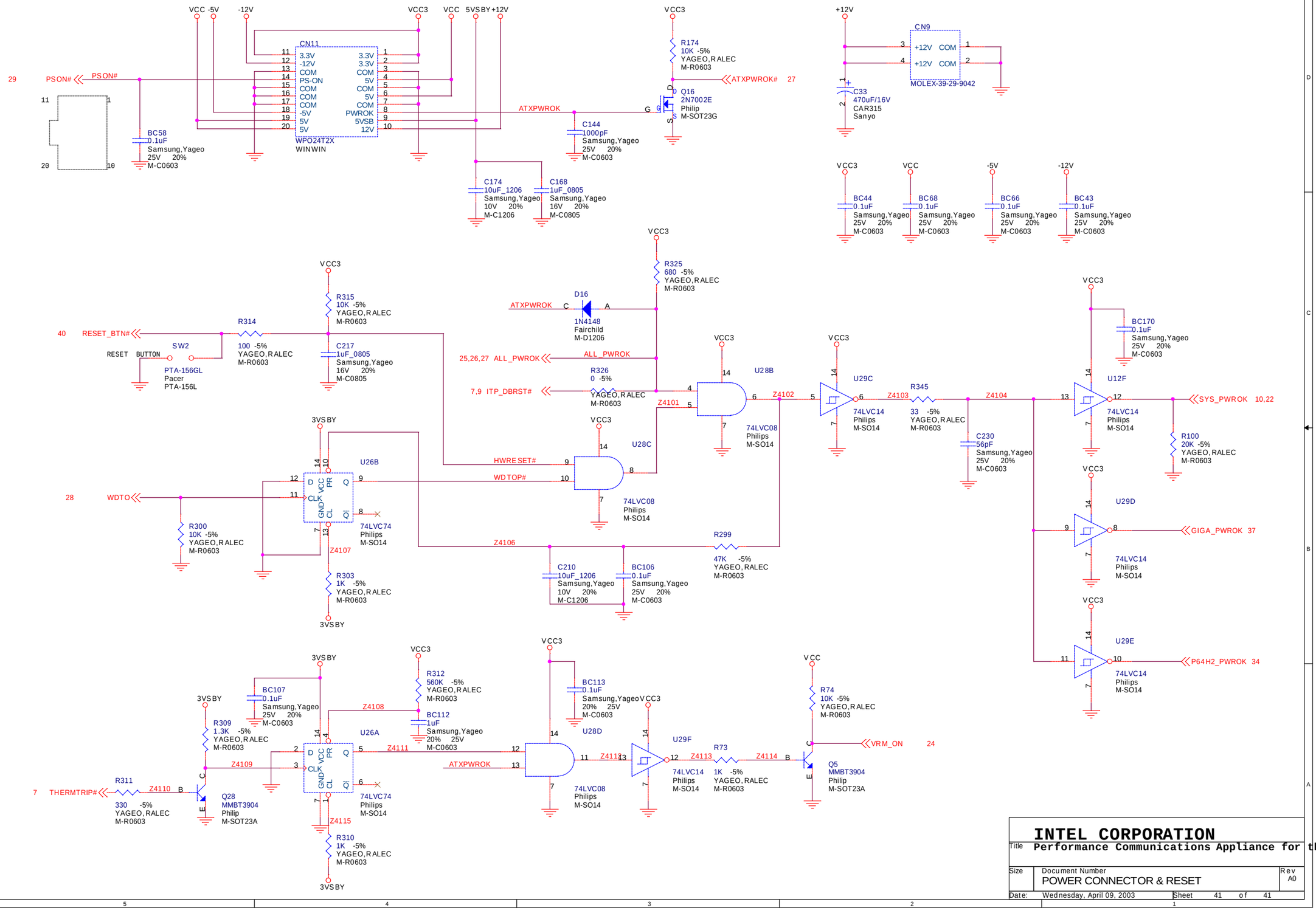


INTEL CORPORATION

Title: **Performance Communications Appliance for the Intel(R) Pentium(R) M I**

Size	Document Number	Rev
	LEDs & LED Connector	A0

Date: Wednesday, April 09, 2003 Sheet 40 of 41


CN11
WPO24T2X
WINWIN
PSON#
BC58
0.1uF
Samsung,Yageo
25V 20%
M-C0603
ATXPWROK
R174
10K -5%
YAGEO,RALEC
M-R0603
Q16
2N7002E
Philip
M-SOT23G
C144
1000pF
Samsung,Yageo
25V 20%
M-C0603
C174
10uF_1206
Samsung,Yageo
10V 20%
M-C1206
C168
1uF_0805
Samsung,Yageo
16V 20%
M-C0805
CN9
MOLEX-39-29-9042
C33
470uF/16V
CAR315
Sanyo
BC44
BC68
BC66
BC43
0.1uF
Samsung,Yageo
25V 20%
M-C0603
RESET_BTN#
SW2
PTA-156GL
Pacer
PTA-156L
R314
100 -5%
YAGEO,RALEC
M-R0603
R315
10K -5%
YAGEO,RALEC
M-R0603
C217
1uF_0805
Samsung,Yageo
16V 20%
M-C0805
D16
1N4148
Fairchild
M-D1206
R325
680 -5%
YAGEO,RALEC
M-R0603
ALL_PWROK
R326
0 -5%
YAGEO,RALEC
M-R0603
ITP_DBRST#
U28B
U28C
U28D
74LVC08
Philips
M-SO14
U29C
U29F
74LVC14
Philips
M-SO14
R345
33 -5%
YAGEO,RALEC
M-R0603
C230
56pF
Samsung,Yageo
25V 20%
M-C0603
U12F
R100
20K -5%
YAGEO,RALEC
M-R0603
SYS_PWROK
BC170
U29D
GIGA_PWROK
U29E
P64H2_PWROK
WDTO
U26B
74LVC74
Philips
M-SO14
R300
10K -5%
YAGEO,RALEC
M-R0603
R303
1K -5%
YAGEO,RALEC
M-R0603
HWRESET#
WDTOP#
R299
47K -5%
YAGEO,RALEC
M-R0603
C210
10uF_1206
Samsung,Yageo
10V 20%
M-C1206
BC106
0.1uF
Samsung,Yageo
25V 20%
M-C0603
BC107
0.1uF
Samsung,Yageo
25V 20%
M-C0603
R309
1.3K -5%
YAGEO,RALEC
M-R0603
U26A
R312
560K -5%
YAGEO,RALEC
M-R0603
BC112
1uF
Samsung,Yageo
20% 25V
M-C0603
BC113
0.1uF
Samsung,Yageo
20% 25V
M-C0603
R74
10K -5%
YAGEO,RALEC
M-R0603
VRM_ON
R73
1K -5%
YAGEO,RALEC
M-R0603
Q5
MMBT3904
Philip
M-SOT23A
THERMTRIP#
R311
330 -5%
YAGEO,RALEC
M-R0603
Q28
MMBT3904
Philip
M-SOT23A
R310
1K -5%
YAGEO,RALEC
M-R0603
INTEL CORPORATION
Performance Communications Appliance for the Intel(R) Pen
POWER CONNECTOR & RESET
Wednesday, April 09, 2003
Sheet 41 of 41
A0